

CANADIAN TEXTILE JOURNAL

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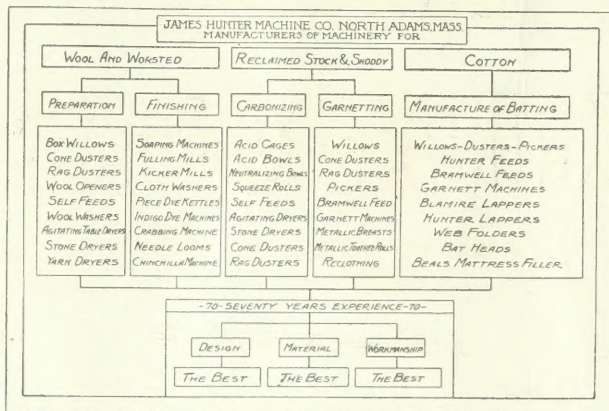
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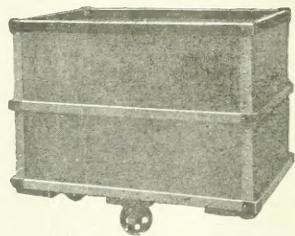
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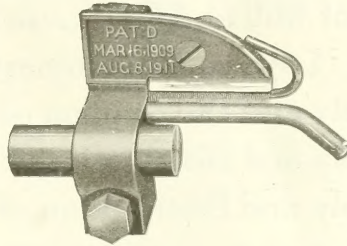
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Adapted to both Cotton and
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How a Mill Was Freed of its Boiler Scale Troubles

A well-known textile mill had considerable trouble for many years from scale in their boilers and auxiliary apparatus. Boiler tubes would be so coated with scale that they could not be removed through the heads when it became necessary to renew them and the scale pans accumulated over a half bushel of scale in two weeks time.

The open feed water heater was scaled to such an extent that the plates and shells had to be cleaned frequently with a cold chisel, and the boiler feed pumps were lined up so badly that valve seats could not be removed but had to be cut in pieces.

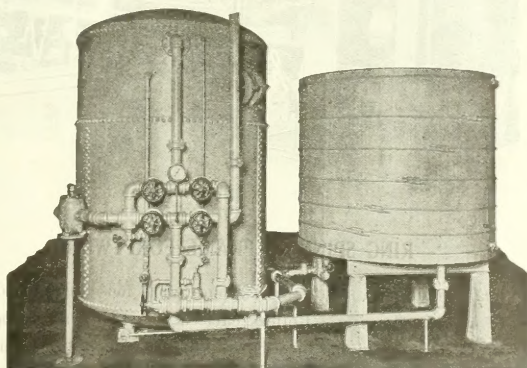
The use of boiler compounds did not satisfactorily relieve the situation, so the company set out to solve their boiler plant troubles once and for all. After a thorough investigation of all types of water softening apparatus they installed a Permutit Zeolite Water Softener that delivers 25,000 gallons daily of absolutely scale-free water for their boilers and textile processing.

After six months of operation they reported all boiler tubes and shells to be perfectly free from scale and corrosion. They had removed the scale pans, their feed water heater was free from scale and their boiler feed pumps were as clean as new. Their boiler plant troubles were solved.

Not only have they saved hundreds of dollars in full repairs, boiler tube replacements, etc., but the zero soft water is used in all of their textile processing where it has effected valuable improvements and many operating economies.

It pays to investigate your water supply. Let us help you. Write today.

The Permutit Company 440 Fourth Ave. New York Offices in all principal cities



This is the Water Softener that eliminated all boiler scale troubles. Can be operated by ordinary labor.

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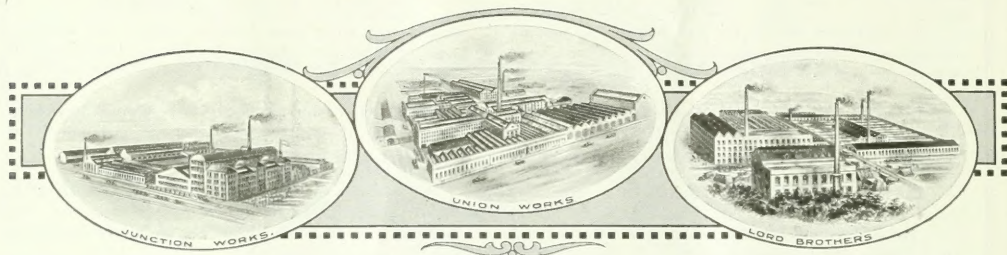
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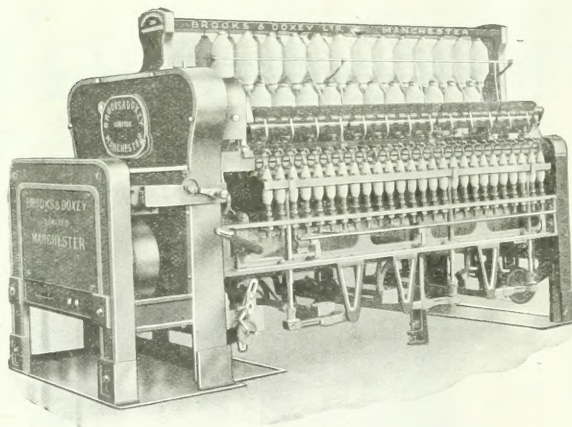


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For the Cotton, Cotton Waste, Wool and Silk Trades

Conditioning Machine for Yarn on Ring Bobbins; Patent Splicing Machine for the "Knotless" Yarn Trade; Roving Waste Openers Thread Extractors; and Spinning and Doubling Frames for Silk.

Also of Tin Rollers, Fluted and Plain Rollers, Spinning & Doubling Spindles, Rings, etc.



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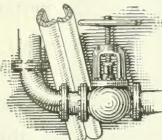


Three ways to cut costs now—in 1922



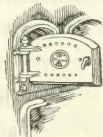
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Service, and Seigelite Sheet, Universal Piston Packing, Sea Ring Rod Packing, Kearsarge Gaskets, Duplex Rod Packing, Mogul Valve Stem Packing.



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Asbesto-Sponge Felted, Asbestocel, 85 % Magnesia, J-M Underground System of Insulation, Brine and Ammonia Insulation.



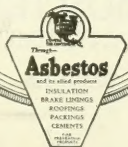
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Specialties

Johns-Manville Steam Trap, Friction Blocks and Clutch Facing, Transite Asbestos Wood, Waterproofing, Industrial Flooring.



IN many cases, manufacturing costs are higher than they should be because the item of day by day operating expense in plant or factory is assumed to be the minimum when it isn't.

If the only remedy for preventable waste lay in new equipment or discarding old apparatus for new, the means would not always justify the end. But in most cases no such expenditure is necessary as the following shows.

Economical use of power

With few exceptions plants installed within the last two decades can perform economically, if given a chance. That they actually do not may be laid to the neglect of a few simple measures seemingly incidental but actually important.

For example, most boilers do not get the care that their excellence deserves. Many of them have leaking furnaces, faulty baffles and poor masonry, while walls and drums are poorly insulated.

Normally this waste of fuel is so large that the cost of its correction by us is but incidental compared to the savings.

Pipe lines offer even greater possibilities for fuel saving—as do all heated surfaces. Pipe covering is often a snare and a delusion, for many coverings let heat slip through. And, often, heated surfaces are even left bare—in spite of the fact that every square foot of bare surface under average plant conditions wastes from 500 to 1000 pounds of

coal a year. Here again proper insulation can be applied by us and so effect tremendous savings.

Lower cost of maintenance

Now consider the operation of the plant. Recall the constant dribble of small charges for plant maintenance. For example total your packing bills alone and charge up to them the greater cost of repair shut-downs, and loss through idleness.

Do you realize that most packings do not last as long as they should, and that ordinary packing can sap much of the power from a pump or engine?

Do you realize that it costs dollars to replace a blown gasket on a pipe line? The best gasket you can buy we can sell you for a few cents more than you pay for the other kind. So in packings think of the life and savings, not price.

Minimum replacement cost

Furthermore all of the above has a direct effect on the life of your plant. Boiler settings cost money to construct, yet ordinarily they last only a fractional part of the time they should and can. This we can prove.

Pipe covering—the strong, felted efficient kind, will last twenty years. Most kinds won't.

Sea Ring Rod packing will save wear and tear on reciprocating rods of pumps and engines and cut down depreciation and power waste.

Every material and service shown on the left can lower your operating cost. A wasteful plant is a competitor inside your gates.

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"THE PRINT DRESS"

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True, print is still the material from which charming, inexpensive and ever-fresh dresses may be made for children. But older members of the household are continually finding new ways or using print for their own personal wardrobes—for decorative effect in house dress, garden costume or other apparel.

In "Prue Cottons" prints your patrons will find inspiration for something new, quaint and inexpensive.

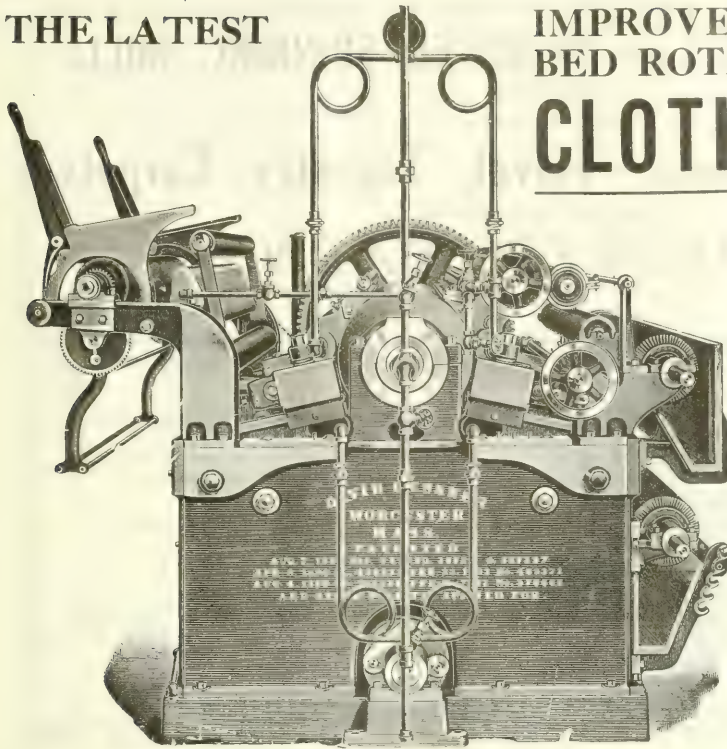
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IMPROVED DOUBLE-
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The bed plates are self-adjusting, the levers that operate them being mounted upon sliding steel fulcrum bars within the frames. The trussing apparatus of the bed plates is so arranged as to permit not only a forcing of the centres of the bed plates in a forward direction, toward the cylinder, but also away from it, which is of the utmost importance if the bed plates should ever become sprung. Bed plates and cylinder after being cold finished, are ground absolutely true while heated by steam at 75 lbs. pressure insuring perfectly straight and uniform pressing surfaces. Pressure is applied and removed instantaneously, and by power.

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Steam Distribution and Control.
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WE ELIMINATE "DUMPING" RETURN TRAPS

Send for our Layout for Textile Mills. It is interesting information anyway, and may prove useful to you.

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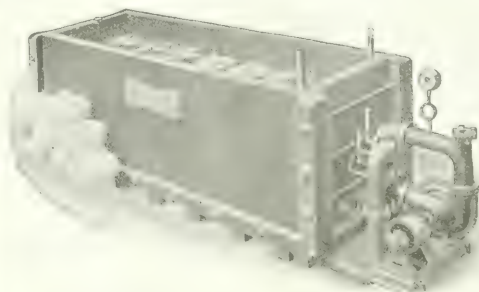
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WORSTED YARNS

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Universal Frame!**

Loom efficiency depends as much on the frame as on the Heddle. If the frame is not properly constructed—if it does not allow for mechanical weakness in the loom and provide for weaving emergencies—then you have wasted good money and equipped with a frame that handicaps both the loom and the operator as well as setting a limit to your output.

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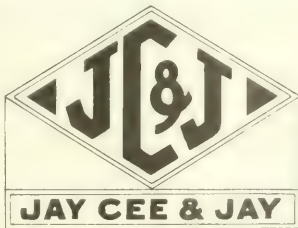
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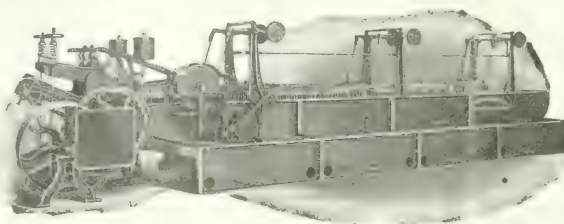
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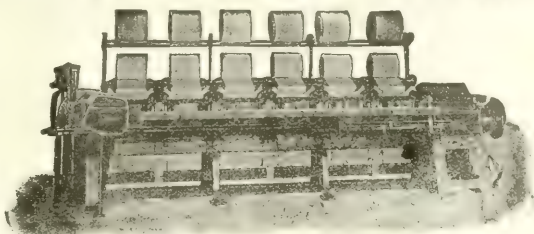
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"ONE MACHINE INSTEAD OF TWO"

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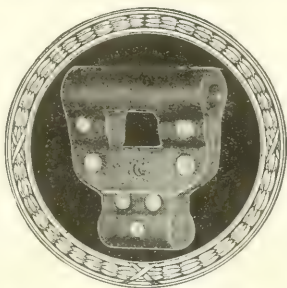
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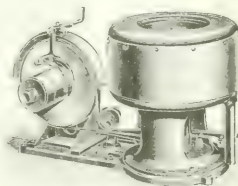
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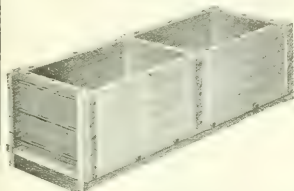
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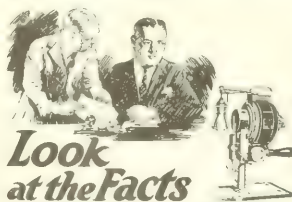
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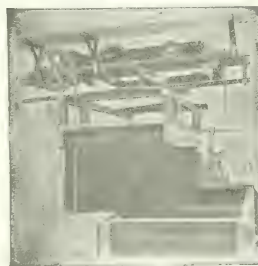
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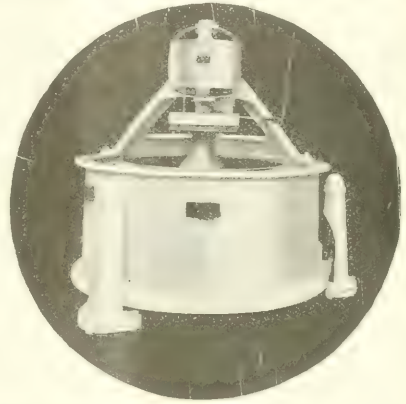
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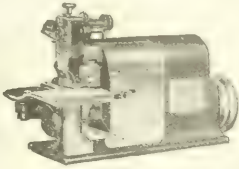
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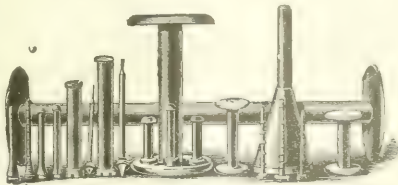
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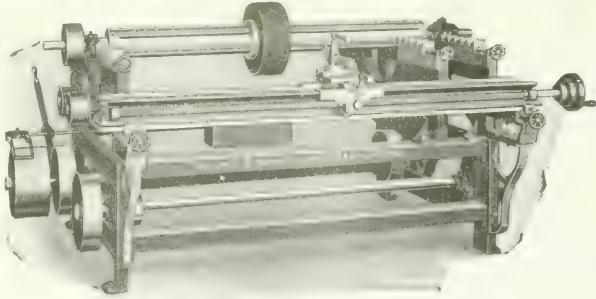
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CANADIAN TEXTILE JOURNAL

*An Educational Periodical, published Fortnightly, for the dissemination of
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and Conditions of the Textile Industry in Canada*

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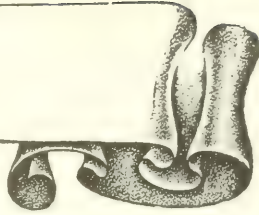
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EDITORIAL



IMPORTANCE OF WOOL BLENDING.

There is no more important operation in the woollen mill than that of blending or mixing the raw stock. By this the actual operation of picking is not referred to although that is equally important. What is meant is the "brains" that send the order sheets down to the picking room.

The blender should be a practical man who knows wool and raw stock soundly, and who knows both the theories and (more important still) the practices of carding and spinning backwards and forwards.

Like much else in a woollen mill, this operation has to be left largely to the judgment of the man in charge and there are really no hard and fast rules. The main point is for the blender to have a very clear idea of the following three things:—

What kind of a thread he wishes to make;

What kind of fibres he has to use; and

What price the final thread is to cost.

Beside these he should know enough of the behaviour of all the various wools and fibres he may be called upon to use in all the processes through which he will have to put them. At the same time he must know enough of the manufacturing end to know what processes the fibres will pass through. And it is as well if he know the idiosyncrasies of the foreman in charge of each department.

Blending is a distinct art because, though there are some broad principles, there are no set rules to go by, and thus much is left to the skill of the blender.

It is fairly safe to say that length of fibre is one of the chief factors in blending due to the mechanical effects produced in the yarn by subsequent operations. Thus it is useless to buy long wool to blend with short wool, because, even though the long wool may be broken in the card, the spinning power of the shorter, finer wool is spoiled. A similar state of affairs occurs in the mixing of cotton and wool blends, the cotton does not blend well with the coarser wool, no matter what the length is, because there are not enough serrations on the wool fibres to grip well with the cotton while the cotton tends to form neps and spears, and, at the best, a neppy, uneven, twitty yarn results.

Cotton and fine shoddy or mungo make a good blend, the fibres being all, more or less, of one length, and thus the cotton helps the shoddy and mungo to spin, and, as the cards can be set up fine, all the fibres get thoroughly carded and a good, sound, even yarn results.

Coarse and fine wools do not make a good batch, because the coarse wool spoils the spinning power of the fine wool, and the fine, short, wool does not get properly carded and thus does not help the coarse wool very much; too often a lumpy and uneven yarn results from this practice.

In blending, the principle is to have the fibres as alike as possible, both in length and in fineness. It is well to remember that the cheapest in initial cost, is not by any means the cheapest in the long run. The output of a mill is the number of yards of "Perfect Goods" turned out and not the number of seconds. It may easily be found that by cutting out "that shoddy or that cotton which just cheapens the blend a little." (a great temptation), money will be saved in the long run. Wool, at the same time, must be chosen with an eye to the use to which it will be put, and it is also better if the blender know where the wool he wants may be obtained. In mills, however, the blender often has to use what he has got, and it is here that real blending skill comes in. Some men can make a cloth ten cents a yard cheaper than others, all conditions being exactly the same, and this alone goes to prove how important this operation of blending is.

The blender in a fancy woollen mill should also be an expert colorist, because he is often required to match shades containing several colors primary, secondary and tertiary. That there is considerable skill in the matching of shades formed by fibre mixtures is well borne out by the numerous shades of Khaki that were produced at the beginning of the war.

It is only too true that the boss carder and the spinner are often blamed for bad work when the fault is nothing more or less than bad blending. It is surely hardly fair to the boss carder, and, in fact, to the whole mill, that this operation should not be under the supervision of a competent man.

BONUSING OF INDUSTRIES.

In the Province of Quebec, a comparatively recent Act of the Legislature prevents municipalities in the Province from bonusing industries. It now looks as though the adjoining Province of Ontario, which has shown little disposition to copy some of the Quebec enactments — and notably that relating to liquor — were going to follow in Quebec's footsteps in this matter so important to industrial enterprise. On the

15th of last month, the question of whether an Ontario municipality shall, or shall not, be longer permitted to bonus an industry locating in its midst came up for discussion in the Ontario Legislature, when a bill prohibiting such a practice was up for second reading.

After a long debate it passed the second reading and went to the committee of the House. Last year a similar bill was finally killed. One of the most powerful arguments against it at that time was that there was no law prohibiting municipalities in the province of Quebec bonusing industries, and, therefore, the bill would place the Ontario towns at a disadvantage. However, Provincial Secretary Nixon was now able to state that Quebec had since put such an Act into force, and, therefore, that argument is swept away. The understanding under which the bill went to the committee is stated to be that it will be toned down a bit and may allow some form of bonuses, although preventing cash bonuses and perhaps tax exemptions. If tax exemption is to be disallowed, as well as cash bonuses, it is not easy to see what special attractions will remain for an Ontario municipality to offer to an industry to locate in its midst.

Of course, some of those who supported the second reading of the bill in question took the line that the practice of bonusing was a vicious one. That is a contention which it is easier to put forward loftily, if vaguely, than it would be to justify by reference to cold, concrete facts. Moreover, we are by no means certain that a bill of the kind proposed does not impinge upon municipal rights.

However, be that latter point as it may, we have little doubt but that the practice of the bonusing of industries by municipalities is calculated to allay more ills, and ills of far greater magnitude, than any it could conceivably create.

Let us explain what we mean. The centralization of industry tends to result in great and grave dangers, both social and economic, to the State. With the best will in the world on both sides, it is practically impossible for the employer to preserve healthy and human relations with his employees in a big city. Indeed, on both sides the human equation is unrecognized. When the employer needs a certain class of help, he puts a shingle in the window or an advertisement in the paper, and when the work is done, for which he required this class of help, the help is dismissed. As for the employee as human being, he knows—almost inevitably knows—nothing of him in that capacity.

On the other hand, the manufacturer who locates his industry in one of the smaller country towns can—and usually does—establish satisfactorily happy and healthy and human relations with those whom he employs. He can take a proper interest in the adequate training and education of apprentices. He can assist his employees to create desirable living conditions. In a hundred ways, physically, economically, morally and socially, he can make life a brighter and better thing for those who work for him. Above all, he can

get into personal touch with them, so that when he talks with one of them it is not the "boss" talking to the "drudge" but the voice of Man speaking with Man—"the living fountain", as Carlyle has said, "out of which all sacrednesses sprang and will yet spring."

We are living in days when class consciousness is keen and class bitterness acute. In this country, as in others, the artificial barriers which separate the rich from the poor are high enough. But here in Canada, thank God, they are at least not insuperable. It should be the fervent aim of all men of goodwill to prevent their becoming so. There is one most efficacious way in which all such can help to draw the poison-fangs of the brazen-lunged revolutionary. And that way it is up to us all to take. We have in our generation, if we would remain a generation at all, to effect that solidarity of classes—between Capital and Labor, between employer and employed—without which progress is a phantom and hope of prosperity a farce. We need to restore a common pulse, a healthy beat to the heart of this Dominion. It is a great work, the work of individual citizens as much as—nay, more than—of Governments, alien from none of us, but rather, on the other hand, highly pertinent to us all.

Each in his place, and in degree, can further it. Each one of us—employer and employed, capitalist and artisan, manager and mechanic—is privileged to play a part in this sublime work; to restore or create harmony between man and man; to look, not for the incidental, or accidental, differences which separate, say Capital from Labor, or employer from employed, but for the common sympathies and common understandings and common aspirations and common needs which underlie and connect all humanity.

There are few who are doing more, in this our day, and generation, to help forward this work—a sublime work as we have ventured to call it—than those manufacturers who, taking their courage in both hands, have located their industries in one of the smaller country towns. Frequently, they have only been enabled so to locate by the grant of exemption from taxation for a period sufficiently long to enable them to educate the local people to do their work, or to provide homes for the trained mechanics whom they bring from the larger cities, or by a combination of both. We have spoken of such manufacturers as taking their courage in both hands. For, indeed, it needs courage of no mean order, on the part of a manufacturer, to locate in a small centre where none of the residents are trained workmen. But unless this is done, and industry thus decentralized, it is practically impossible for harmonious and human relations between employer and employee to be maintained, and for the workers to obtain something approaching ideal working and living conditions.

For such reasons we consider that for Legislatures to seek to prohibit municipalities bonusing industries is a grave error which must react detrimentally to the

best interests, social as well as economic, of the State.

In Great Britain, in the United States and elsewhere progressive industrial thought is turning more and more to the decentralization of industry for the solution of many of the most baffling, and even menacing, of industrial problems. In such circumstances, it certainly seems somewhat ironical that Provincial Legislatures in Canada should take, or contemplate taking, steps calculated to make industry more highly centralized still.

THE LATE SIR JOHN EATON.

In the death, last month, of Sir John Eaton, Canada loses her greatest merchant, one of her largest-hearted employers, one of her most open-handed philanthropists, and one of her most ardent patriots.

His munificence was proverbial. The University of Toronto, the Toronto General Hospital and many other public institutions and causes of worth owe much to his benefactions. One often hears it said that it is easy for a very wealthy man to be generous—but it is surprising how comparatively few very wealthy men are of a generosity commensurate with their wealth. But it was not only in the magnitude, but in the manner, of his donations that Sir John Eaton may well be taken as an example by other very rich men. He gave freely but with a deep sense of personal responsibility and with a rare sense of discrimination, and with a public spirit that it would be difficult to extol too highly.

Inheriting a great business from his father, he saw it, under his own direction, develop and expand until it became probably by far the largest concern of its kind in the British Empire. His father, who was a man of almost unique commercial acumen, had set before himself certain ideals as regards working conditions, and these the son, with very practical filial piety, set himself to attain, and with such success that the mammoth Eaton organization became a model to Canada, and, indeed, wellnigh to the world for the relations subsisting between itself and those in its employ.

The whole country owes to Sir John Eaton for his war work a debt which can never be either repaid or forgotten. Rich man as he was, even he must have felt the sacrifices which all his various war activities entailed. His yacht placed at the disposal of the Government—enlisted employees treated with a munificence probably without precedent or parallel—the Eaton Machine Gun Battery organized and equipped—such are some of the ways in which the deceased Knight sought to aid the country and the Empire both of which he loved so well.

Born in 1876 Sir John entered his father's store at an early age, laying the foundations of his career on the solid rock, by beginning at the bottom of the ladder, of which he was one day to reach the top. He actually began work in the parcel room and from the first was treated in the same way as any other employe. From this beginning he worked his way through every de-

partment thus learning at first hand the actual conditions under which the business was run. It was no doubt this early training, and the thorough insight that he gained then, that enabled him to carry the business, his father started, to such a predominant position, not only in Toronto, but throughout the Dominion.

At the age of twenty he was sent on a buying trip round the world, and even at this early age gave ample proof of his business ability. Seven years after this he became a director, and a little later vice-president of the company, as his father came to rely more and more on the man he had chosen to succeed him. As vice-president he gradually assumed a larger share of the increasing responsibility of the rapidly expanding business. It was who saw the vast possibilities of the west and who conceived and followed out the idea of the Winnipeg Store, the west only having been discussed previously, with reference to the mail order business. He it was who saw the vast possibilities of and has been to Winnipeg what the Eaton Store has been to Toronto.

Two years later, on the death of his father, Sir John took over the full powers of the presidency, and proceeded to carry his ideas of expansion still further, opening up distributing centres at Saskatoon, and Regina, in the west, and at Moncton in the east.

During the fifteen years which he occupied the presidency the company extended itself far and wide, and has advanced from the one store in Toronto to the Dominion-wide organization it now is, with all its manifold departments and branches: because the store, wonderful though it is, is only the facade of the vast organisation, of factories, warehouses and transportation, etc., that is out of sight. It is not long ago since a deputation of merchants from London, England, visited Toronto to see for themselves the methods employed in the departmental stores there, notably Eatons, the fame of which had reached them across the water.

Sir John was also a director of the Dominion Bank and there too, his loss will be a keen one, as owing to his wide grasp of industrial, commercial and financial matters his advice was much valued.

Sir John Eaton was a widely and deservedly popular man—popular even with those whose scheme of things does not usually admit of their liking millionaires overmuch. And the great reason for his immense popularity lay in the intensely human character of the man—human in the absence of all pretence and pretension, human in his manifold desire to take his part whether of work or of play, human, above all, in his humanity to man.

EDITORIAL NOTES.

Wool Growing at a loss.

One feature of the wool trade, says the Textile Record which is very regrettable is the undoubted loss which is being incurred to-day by thousands of New

Zealand and Australian pastoralists who were entirely given up to the production of medium and low crossbred wools. Mr. H. Norman Rae emphasized this point at a recent meeting of the British Wool Federation, his Australian trip having brought him into close contact with many who, apparently, are keeping sheep at a decided loss. The reader must not overlook the important fact that in years gone by the carcass of a crossbred sheep has been worth, on an average, well over £1 in New Zealand, but the slump in frozen mutton, coinciding with the terrific fall in crossbred wool, has driven prices to a most unprofitable level. This is the way to make many sheepmen sell off their flocks and go in for dairying. We have reports from important sheep districts in New Zealand where, with the establishment of creameries, farmers are going in for cattle raising. We hope that this will not become general. Sheep breeders throughout the world, with the exception of those keeping merinos, are experiencing lean times like every other branch of the wool textile trade, but having had good times during the war, we think they will show sufficient grit to stick to their sheep, for better days are in store.

Australasian Merino vs. Crossbred Wools.

During the 1920-21 season 286,142 bales of merino wool were sold in Sydney and 32,786 bales of crossbred, being 90 and 10 per cent, respectively. In Melbourne the proportion was 66 per cent merino and 34 per cent crossbred. At Geelong the proportion was 62 per cent merino and 38 per cent crossbred. In Brisbane 98 per cent of the wool sold was merino, and the same proportion was recorded in Adelaide. In Western Australia 96 per cent of the wool was merino. In Tasmania the proportion was 43 per cent merino and 57 per cent crossbred, while in New Zealand only 4 per cent of the wool sold was merino, the remaining 96 per cent being crossbred. (The Wool Record and Textile World, Bradford, England.)

Business on Sounder Lines.

The outcome of the past month's trade according to the Textile Record, is to make business possible on sounder lines. A see-saw movement of values certainly affects trade, and everyone is very desirous of seeing stabilised values even for merinos. There are still those who forecast sensibly higher values by the middle of the year for merino wools, but it will be a real good thing for everybody if no such thing happens. Merino wools to-day are on a paying basis for the grower, and there is absolutely no need to push prices higher. The weakness is undoubtedly at the crossbred end of the trade, and the setback during February cannot but be a bitter pill to New Zealand and South American pastoralists, whose position to-day demands a good deal of sympathy. They are paying part of the price of the war and suffering under fashion's fickle decrees, but surely the time will come when even crossbreds will command more extended support. Crossbreds from

48's and below cannot fall to a lower level, and regular users are investing liberally in these wools, feeling confident that sooner or later a big profit will be made on them. In view of the big stocks of medium and coarse crossbreds held by B.A.W.R.A. it is a question whether it would not pay users better to buy and sell on small margins than to purchase big weights and put same into stock until much higher prices rule. However, whatever happens, 36-48's wools cannot depreciate further.

Raw Silk Higher.

From the Textile World we hear that the local raw silk market continues quiet, with a minimum of business being placed. Prices have advanced somewhat and are firmly held at their new levels due to the firmer tone prevailing in the Yokohama market.

The Milan market is reported quiet, with reelers anxious for business. Prices are practically nominal and the situation generally is unchanged from last week.

The Yokohama market is featured by a firmer tone and a moderate daily business is being done at the pegged level of 1,720 yen for double extra grade.

Prices given out at close of business on Wednesday follow:

Filature Kansai Double Extra 13/15.....	6.75
Filature Kansai Extra 13/15.....	6.40
Filature Best No. 1 Extra 13/15.....	6.35
Filature Best No. 1.....	6.25
Filature Kansai No. 1 13/15.....	6.20
Filature Sinshui No. 1 13/15.....	6.15
Four months' basis.	

Canton, 14/16, new style.....	6.50
Canton, 20/22, new style.....	6.30

ITALIAN

Extra classical.....	7.25
Best classical.....	7.00

Polish Cotton Mills Busy.

Recent reports from Poland indicate that important sales of cotton goods to Russia have been completed. Eastern Galician merchants have for some time been placing large orders in Lodz and it is supposed that a considerable quantity of these orders are also destined to Russia.

Rumania has been buying cottons freely against funds according from the calling in of the Polish white currency.

Practically all Polish cotton mills on account of this increased buying are now working to capacity.

WILL ISSUE LOAN

Ottawa, April, 10.—“The Government is contemplating the issuing of a loan, the precise amount of which has not yet been determined,” said Hon. W. S. Fielding, Minister of Finance, in the House this afternoon, when questioned on the forthcoming refunding loan. Tax free bonds to the amount of \$182,834,500 mature on December 1. “It is not the intention of the Government to issue tax free bonds,” added Mr. Fielding.

Canadian Cottons' President

The industrial, commercial and financial concerns with which Mr. Charles Rudolph Hosmer is connected either as president, vice-president or director, make a long and imposing list. To the general public he is, perhaps, best known as the president of Canadian Cottons, Ltd., which is, of course, one of the very largest cotton concerns in Canada. In all this company owns and operates no fewer than seven mills. Of these, five—namely the Canada, Stormont and Dundas mills at Cornwall, and the Ontario and Hamilton mills at Ha-

milton realize that the mills in the country are the working conditions better than in those which are owned and operated by Canadian Cottons, Ltd.

Of course, in a large city, such as Hamilton, with a population of about 120,000 people and possessing some 500 factories, big and small, the Company's employees do not form a community of themselves, so to speak. But in Cornwall with a population of 7,000 the Company's employees number more than a seventh of the entire population. In Marysville, which has only just over 2,000 inhabitants, they form more than a third of the whole population. At Milltown, again, where the population is of about the same number as at Marysville, the Company's employees form more than a third of the whole number. It is thus obvious that, both at Marysville and at Milltown, and, in a somewhat lesser degree, at Cornwall also, the Company's mills constitute the centre not only of the industrial, but also of the social, life of the respective communities in which they are situate. It is from the mill and those in charge of it that the many recreational activities which are such a marked feature of the communities amid which the Company's mills are located, radiate. At Marysville, for instance, the Company has built a clubhouse of a very charming and complete kind, with a large recreation hall, bowling alleys, motion pictures and games of every sort and description. This is just a typical example of the kind of thing that the Company does at all its country points. For it is thoroughly imbued with the notion that "All work and no play makes Jack a dull boy" as also with a due realization of the undoubted fact that happy and contented workers result in fruitful and efficient work. Not in one direction alone but in many—in the very low rentals it charges its employees, in its hours of work, in its establishment of group insurance, in its provision of admirable working conditions—is the human interest of those who direct the policy of Canadian Cottons, Ltd., displayed in its considerate treatment of those who serve it.

Not a little of the credit for this must be given to Mr. Hosmer personally. Lord Lee of Fareham, the British First Lord of the Admiralty, who has known Mr. Hosmer for many years, took occasion, the other day, to pay a high tribute to his qualities of heart as well as of head. As regards his business ability, indeed, this is a matter of common knowledge throughout the Dominion. In addition to Canadian Cottons, he is president of the Ogilvie Flour Mills Company, Ltd.; the Ritz-Carlton Hotel Company, of Montreal Ltd.; and the West Kootenay Power and Light Company, Ltd. He is vice-president of several important industrial concerns, including the Laurentide Company, Ltd; and among the many organizations of which he is a director may be mentioned the Canadian Pacific Railway Company and the Bank of Montreal.



MR. C. R. HOSMER.

milton are in Ontario. The other two—namely the Gibson mill at Marysville and the St. Croix mill at Milltown—are in New Brunswick.

In all, Canadian Cottons, Ltd., employs some 3,500 persons, its male and female labor being divided in something like equal proportions. It is only right to say that the Company enjoys a very enviable reputation as an employer of labor. It has devoted much attention to the health and happiness of its employees and it must be a considerable source of satisfaction to those who are charged with the direction of its affairs

How Should The Government Finance?

**The Necessity for Financing Is Plain And There Is
More than one Method open to the Government—
The Situation Discussed in some of its More
Important Bearings.**

By A. R. R. JONES.

The necessity for financing in the near future, on the part of the Dominion Government, is sufficiently obvious. What it is proposed to discuss here is the question of the method which the Government would do well to adopt in setting about that necessary, if perplexing task.

It is a task which is inevitable from the circumstances of the situation in which the country finds herself today. In the first place, the Government is confronted by the fact that, on the 1st December in this year, it will have to meet a five and a half per cent. loan of about \$180,000,000 which will become due on that date in Canada. In addition to this, it has been gathered, from published financial statements of the Dominion Government, that there are certain floating liabilities—for example, loans from the banks and so forth—which will presumably require to be taken care of. These floating liabilities, it would appear on the Government's showing, amount to between another \$150,000,000 and \$200,000,000. It would seem only reasonable to assume that, when the Government sets about financing, in order to meet the loan accruing due in December, it should seek to "kill two birds with one stone," as the saying goes. In other words, that it should take the opportunity of funding the last mentioned amount also.

Some \$400,000,000 Needed.

That would mean that a sum of not very far less than \$400,000,000 would have to be raised. If these premises are correct, we are at once brought face to face with the question, By what method should the Government proceed to raise this large sum?

There are, it would seem, three ways by which it could raise such a sum. First, by means of a domestic loan in Canada; secondly, by means of a loan in New York or London; thirdly, by means partly of a domestic loan and partly of one in New York or London. One mentions London advisedly, for the reason that it is a fact, well known in financial circles, that Canada could raise a fine loan in London. For her credit there is of the highest. At the same time, one must certainly think that, at the moment, the rate of exchange for bringing money out to Canada would prohibit this method of raising a loan. For the disadvantage of bringing the money from London to Canada, owing to the depreciation of the pound sterling, constitutes a formidable, if not an insuperable, barrier to the raising of a loan in this way. Thus, for practical purposes, one cannot be far wrong in assuming that

the loan will have to be raised either in Canada or in New York, or partly in the former and partly in the latter.

Domestic Loan Popular.

There are several outstanding arguments in favor of a domestic loan. First, there is the fact that it would be undoubtedly popular. This is an argument which needs no elaboration. Secondly, it must be borne in mind that, as all the money which the Government requires, whether for the purpose of meeting the loan which will become due on the 1st December, or for that of defraying the floating liabilities of which mention has been made, would be paid out in Canada, there would be no question of exchange involved, were it to be raised by means of a domestic loan—and this is a consideration of unquestionable importance. Thirdly, with such a large loan as that of \$180,000,000 falling due in December, Canadian investors would naturally feel aggrieved if they were to be afforded no opportunity of reinvesting in Dominion Government securities.

New York Market Attractive.

So much in favor of a domestic loan. At the same time, the New York market is so attractive that the Government is bound to consider the feasibility of obtaining the money—or part of it—that it needs there. For, notoriously, it could borrow vast sums there without difficulty, and on better terms than any other country in the world, except the United States itself. Indeed, while mentioning this matter of terms, it may be stated that both the New York and the Canadian markets are highly favorable to first-class, gilt-edged bond issues, and the Dominion Government, in either place, would command the best terms the market could give. Indeed, in all probability, it would be found that there would not be much difference in the terms in either place.

On the whole, one can entertain little doubt that the Government will elect for placing the loan in Canada. It might conceivably, place half of it in Canada and half in New York. But one would venture to hazard a guess that, supposing it decides to raise \$400,000,000, it will raise either the whole, or about three quarters of the whole, in this country, raising the balance (in the latter case) in New York. To raise part of the loan in Canada and part in the United States, would possibly result in better terms in both countries by reason of a smaller principal amount being required.

Straight Business Proposition.

It has been stated that a domestic loan would be highly popular. At the same time, the circumstances are far from the same today as when the early war loans were floated. Then people subscribed under the influence of war enthusiasm and in the knowledge that their subscriptions were essential if Canada was to retain her pride of place in the fighting line. Today, it is different. Investors will regard the loan as a straight business proposition. Further, although it is common knowledge that the banks hold large amounts of money, at the same time it would scarcely be logical to suppose that there is as much available today for immediate investment as there was some while ago before Canadians had invested so largely in Government loans. On the other hand, however, it is probable that people are not so ready to invest in many other undertakings, just now. For it is well known to be the case that, in periods of business depression, like the present, large sums of money become available for investment, but not for investment in common

stocks or enterprises where the income, from the necessities of the case, is not assured.

The Time and Terms.

When may the loan be expected to be announced? That, of course, is a matter which "lies on the knees of the gods" — or, rather, of the Government. But today is the 11th day of April. Accordingly, it would not be unreasonable to assume that, unless the Minister of Finance announces the loan between now and from the first to the middle of June, it will be left over until the autumn. As a fact, there are financial authorities who hold strongly that the market is going to get a lot better before it gets worse. If they are right in their view, then the Government might do worse than sit tight until the autumn.

As to the terms of the loan, these must be all matters of pure conjecture. There are advocates of a short loan and advocates of a long one, and so on. But the Government will doubtless have the advantage of consultation on all such matters with the best expert financial brains in the country.

Textile Trade Practice

A comparison of the methods in vogue in British and Canadian Industries
by B. X. C. Baily.

It is a well-known fact that two people may independently reach the same result by methods widely different, but it is seldom that either method is so perfect that it cannot be improved by comparison with the other method.

It is exactly in this spirit of cooperation, rather than criticism, that a comparison should be made between British and Canadian (or American) methods in the Wool Textile Industry.

The Wool Textile business is so large and has so many different branches that it is commonly supposed that a man might live a thousand years and still have something to learn in this intensely interesting business.

We shall therefore have to confine ourselves in these comparisons to a few glimpses or snapshots of business conditions on each side of the Atlantic Ocean.

The first point to be noted is that in Britain the Woollen and Worsted industries are separate entities. Though there are some firms which do a little of both, they are very few and are fast dying out through being unable to compete in efficiency with those mills which specialize in one or the other branch.

Another point is the great difference between the respective markets, particularly the size of these markets.

There is also the climatic difference, though this is to my mind very much exaggerated. Most of this talk about climate has prejudice at the bottom. Besides all this, there is the underlying difference of temperament, which is clearly seen in the build of machinery made on either side of the Atlantic.

The great desire on this side seems to be for speed and production, even if quality does suffer a little. This tendency should, however, appear less and less as competition, both domestic and foreign, becomes keener

Geographical Position of Mills With Regard to Each Other and the Relative Centres of Industry.

The geographical position of the mills on the other side of the ocean, with regard to both the center of the industry and each other is relatively close, as any one will realize who has visited either the English or the more popular Scotch Woollen Industry. But the woollen industry, even in Britain, is widespread as compared with the Worsted Industry, which is almost entirely confined to a circle of 25 miles from Bradford Town Hall. This geographical proximity has a great bearing upon the organization and efficiency of the British Wool Textile Industry.

Perhaps in the Worsted Industry will be found the greatest difference from Canadian Practice.

Organization of British Worsted Industry.

The Worsted Industry is divided into the following main branches: Combers (top makers), Spinners, Weavers, and Dyers and Finishers, to which might be added Wool Staplers. The practice is for the big combing concerns to send their own buyers to the Australian wool sales, or to buy at the London wool sales. At one time all the buying was done at the London wool sales. In the old days, when the journey took three or four days on horseback, originated the saying, "All news is bad news," because if they were well, the hard-headed Yorkshiremen preferred to save their shilling for postage and instead of sending their wives news, arranged that they would communicate only in event of an accident or some other misfortune.

The wool combers and topmakers sort the wool and form standard qualities through the mixture of many marks of wool, as opposed to always buying one mark for one quality.

In the combing plants one finds all the machinery up to, and including the wool comb. Even here we find further subdivision; as, in mills which use 44's Bbd quality and over, the wool is carded, while in mills where lower qualities are used it is prepared in gill boxes and preparing boxes.

In the combing mills the wool is sorted, washed, carded or prepared, backwashed, and finally combed.

The second great division in the Worsted Industry is the Spinners, who, like the combers, are divided up according to the different grades of wool spun.

Thus we find Botany Spinners, Cross bred Spinners and Spinners of English Wools, as well as the various classes of Hair Spinners, with which we do not propose to deal here.

There are also two methods of drawing the tops down to roving open drawing and cone drawing. It is rarely that both are found in one mill, while it is also usual for each mill to confine itself to either "ring", "cap", or "flyer," spinning.

From the above description it will be easy to see that there is every chance of being able to employ at least one man in every mill who is a past master of his job. For instance, when a man is required for cone drawing, he is obtainable, is an expert at that job, and has sufficient work to keep him busy at that job only. Thus he is not spoiled by having to stop and give a hand to the man who, for example, looks after the combs.

In addition, in Britain, the son follows the father and thus the father will teach all he knows to the son, and will take greater pains as a rule than he would take with any outsider. There is no doubt that experience counts in the long run, but experience, it is well to remember, must keep pace with new developments.

Having followed the organization of the industry up to the yarn stage, we find that the yarn is next sold to the weaver, either on cheese or on hank. There are some small firms in Bradford who do nothing else but wind and warp, sending the warps out on the beams. It is quite usual to see a motor truck full of beams in Bradford.

The yarn thus wound is next woven up into cloth. (Let us assume that we are following a grey piece) at the weaving plant. The cloth may be burlled and mended here, or it may even be sent to a firm who specialize in this work. After mending, the piece is sent away to the dyers and finishers, who finally send the cloth to the merchant for sale.

The main advantage of this organization is that every firm becomes more and more efficient, and at this time I do not suppose any dyeing and finishing anywhere is just as good as the work done by the Bradford Dyers Association, who dye and finish the greater part of the material produced in the Bradford District.

In this kind of organization, waste is reduced to a minimum, and neither time nor labor is lost in waiting or experiments. Each man is like the part of a well-oiled engine, and does his work smoothly and easily and with a minimum of effort.

The cost of transport is negligible in comparison with the efficiency thus gained, because most delivery is done by motor trucks belonging to the firms themselves, for the Winters in Britain are not so severe as to ever curtail traffic for more than a few hours.

The British Woollen Industry.

The woollen industry is much more widespread in Britain than the worsted industry, but even here the industry has tended to cluster around certain places where a special line of goods is turned out.

The general organization of the British woollen mills is not so very different from that of the Canadian mills—at least the difference is not nearly so marked as in the case of the worsted industry.

It is quite usual to find that the woollen mills are out of town; at least, they are not quite as close together as the worsted plants in the city of Bradford.

In the West Siding of Yorkshire, the industry centers around Leeds, Huddersfield, Deasbury, Batley, etc., covering an area of a little more than that of the worsted trade. In the West of England, the trade centers around Frome, but there is not as much work done here now as formerly. Next, of course, we have the big Scotch industry, with its center around Galashiels. While this is perhaps the largest single district, it is by no means the only place where good woollen goods are made in Britain.

The woollen manufacturer, however, still carries on most of his operations—often all his operations—under the same roof. Here it is well to state that the heavy woollen business should be dealt with separately, as in dealing with goods made entirely from remanufactured fibers and cotton big bulk must be made to show any return on capital.

One of the greatest difficulties on the Canadian market is the small quantity of each line required, hence our narrow cards here and the broad cards in England—a point that will be dealt with later on.

The British knitting industry centers around Leicester, though, unlike the Canadian mills, most of the yarn is bought right on the Bradford market or at Huddersfield, depending upon whether it is a woollen or a worsted thread that is being bought. There is little or no knitting carried on apart from this Leicester hosiery trade.

The larger woollen mills still buy their wool direct from the London wool sales, though they also buy a large quantity of noils, from the wool brokers, into whose hands this waste from the combing finds its way. The smaller buyers usually buy from the wool brokers, as among other things, this obviates the carrying of large stocks of wool over extended periods.

The wool is usually even here subjected to a cursory inspection, not exactly wool sorting, but a throwing out of undesirable qualities, particularly in dealing with mixed lots, pieces, tags, bellies, etc. Carbonizing is still quite often done in the mill, although there are two plants at least, in Bradford, that do carbonizing and wool scouring only on commission.

Advantages of British Manufacturers.

The British manufacturer has always this advantage; that he can go to the London or Liverpool wool sales and bid if he is dissatisfied with what his wool broker

is giving him. Also, of course, he does not have to add the cost of crossing the Atlantic nor the Canadian freight charges which at the present high rate make a considerable difference.

In this matter, Canadian manufacturers have their future in their own hands, because it is undoubted that good medium qualities of wool can be grown in Canada. The Government has certainly done its share in assisting to educate the farmers, and though perhaps at present the fruit looks small in comparison with the labor, yet in time good results will be witnessed.

The British woollen manufacturer, however, still has the advantage of old-established business, numerous highly skilled help, who, like their fathers before them live and die in the woollen industry; foremen trained by their fathers or who have served a long and tedious apprenticeship — without, in many cases being paid at all.

One always has to work for nothing at first, and in fact in some places one has to pay to learn; which is after all quite fair, because the man that is teaching is usually giving good value, though naturally this is not always the case.

The Canadian Wool Textile Industry.

The Canadian wool textile industry may be divided into two classes: those mills that are likely to survive and those that are not. There is still a certain amount of hope for this latter class, but catering as they do to the small farmer in out of the way villages they will only last as long as the country farmer remains ignorant and communications are bad.

Once the farmer gets to like a good looking, good feeling good wearing, cheap cloth, then the days of these little factories will be over.

One of the best features about the Canadian industry is the "good working conditions" in the mills generally. The employers as a rule take an active interest in the welfare of their help; and as the population is smaller and the mills are scattered they often get to know their employees personally, better at any rate than the large mill owners in cities like Bradford.

The great difficulties here are the "high cost of transportation", due to good and sufficient causes, no doubt, but there just the same. Then there is the lack of skilled help; a man who has worked a few months in the card room considers himself an experienced man. There is small wonder therefore that the trials and tribulations of the Canadian mills are what they are.

There seems to be a kink in Canadian psychology which forbids a man to stay with one trade all his life. Among the English speaking Canadians, this restlessness is particularly noticeable. Travel is no doubt a wonderful educator, but what the Dominion needs more than anything else is good solid citizens of sane mind who will work and who will stay at their work and become experts. What the textile trade here undoubtedly needs is Canadian experts.

At present it must be galling to Canadians to see all the best positions, at any rate the technical positions, occupied by strangers, either from across the ocean or across the border. Here again the cure lies once more with Canadians themselves, who if they wish to become experts should get right down to hard work and become experts at their jobs through experience.

The Canadian market during the past has always been a small one, and for this reason we find that Canadian mills differ from British mills in the running of narrow cards, thus effecting an economy in operating charges. This latter feature will be dealt with in a later article, as it is really a study in itself and would make this article altogether too long if discussed here.

Climate has a very great effect upon the woollen fiber here, and particularly in the Ottawa valley area. The electric conditions in the card room are a handicap, that is rarely or never felt in the more or less damp English and Scottish climate. Electric conditions may, of course, be rectified by the judicious use of steam or humidifiers.

From the foregoing it will be seen that the greatest point of difference is that of specialization as against the "all round mill," and the expert against the "all round man". It is not necessary or desirable altogether to go into the reasons underlying this fact, but we may put it down roughly to the market differences and the comparative youth of the industry over here.

There is no doubt that the worsted cloth is harder to make and takes far more outlay in capital, and one of the reasons for the subdivision of this industry is that the capital required to work, two or three complete units would be as much as the average company could advance. Thus we have the division of the industry to produce better products at cheaper rates.

There is no doubt that specialization does both lower the cost and better the article as a rule, and it also tends to keep the industry all in one place, which is another advantage.

DOMINION LINENS' STRONG POSITION

A general meeting of the above company took place in Quelfh Ontario recently at which there was a good representation of the shareholders.

The annual statement was read and approved. The management discussed with the shareholders the question of the enlargement of the companies operations. It was pointed out that both plants of the company and its subsidiary the Flax Spinners Ltd., were working to capacity, and had not closed down, nor been forced to go on short time, during the entire period of depression, a unique position among manufacturing concerns in Canada. The Shareholders approved of the bylaw reducing the number of directors and the retiring directors were re-elected.

On Specialty Yarns

By J. H. KERSHAW

An address delivered to Ashton-under-Lyne and District Mill Managers' Association.

When considering how to deal with the subject of "Specialty Yarns" I asked myself the question where to draw the line between "Ordinary" and "Special," and found it difficult, if not impossible, to answer. I think you will agree with me that terms like "Special" and "Super" are used rather too freely. They do not really explain the quality of the product compared with that of some other maker. What is one producer's "Special" or "Super" may not be any different or any better—in fact, may not be so good as another producer's "Ordinary." Sometime in the future we may see an extension of the classification of qualities of single yarn started during the period of yarn price control, when it may be possible to arrange that ordinary twisted yarn of certain counts with a certain strength shall fall within a certain classification, with further sub-division for grade, colour, etc., so that it will be a guide to a buyer in distinguishing in which groups a spinner's yarns are classed, and be of some assistance in comparing with the production of another maker.

Although, during the abnormally slack time we are passing through, there has been a considerable amount of changes in order to try and make a quality that could be sold, the bulk of spinners are usually on qualities of a standard to suit the section of the market they cater for.

There are certain well-known recognized standards for amount of twist in warp and weft yarns for cloth manufacturing. A user of these yarns is able to standardise in certain qualities and could probably be equally well suited by quite a large number of spinners. If a yarn a little superior is necessary, or one somewhat inferior would suffice, depending on what the yarn had to undergo, it is an easy matter to find sellers of such qualities in the principal counts used. In a general sense this is the style of yarn that might be called "Ordinary," being the most easily obtained and supplying the requirements of the largest number of users. If a departure be made in various features we start creeping into "Specialities" or "something uncommon." Let us notice a few of them:—

Colour

Depart from the usual colours of American or Egyptian cotton and we find:—

Yarns spun to maintain reasonable strength but to come cheaper by use of weather stained, tingly, dull or off-coloured cotton, which can be bought cheaper than the same staple or normal grade or colour—liable to be somewhat variable and stripy, but there are openings for such yarns where colour is not important, and, with discretion, useful for some branches of dyeing.

Then there is cotton with pronounced natural colour such as Coconada, from which regular results can be obtained in coarse counts and serve a useful purpose, being comparatively cheap and a distinctive colour without dyeing.

Dyed cotton is a step further either for self colour effect or mixtures, also for mock granddrills.

Twist

Depart from the usual warp twist of about $V \times 3.75$ American, 3,606 Egyptian, and there are various degrees of softer twists for weft doubly weft down to hosiery

as low as $V \times 2.5$, with a reduction in strength as less twist is used, but that is not the important factor. Going the other way, harder twists are used up to about $V \times 8$ for crepes. Here again strength is affected, for after you reach about $V \times 4\frac{1}{2}$ with American cotton the yarn is weakened through overtwisting, so that where the extra hard twist is put in it is necessary to use better cotton than for ordinary twists.

Double Spun yarns, viz.:—Yarns spun with ordinary or soft twist and then have twist to the single thread only added at a doubler, or, shall we say, at a twisting frame, form another class of hard twisted yarns.

Direction of Twist.

Twist way and weft way spun weft for ordinary cloth purposes are well known. There are also reverse twist yarns made for special purposes, with various degrees of twist, both for cloth and doubling purposes.

Strength

Considerable quantities of yarn are "spun down" out of extra quantity cotton sometimes combed to get specially good appearance or extra strength, and so they become more in the nature of specialties.

The above yarns are comparatively level and regular in appearance according to quality, but there is also a use for:—

Yarn spun purposely as irregular as possible to show thick and thin places at irregular intervals.

Also Nep yarn spun purposely with neps as an attraction, instead of being a fault, sometimes a coloured ground, such as red yarn with white neps.

Slubs in single yarn are made by means of a mechanical arrangement to give a sudden additional speed to back rollers, so as to let a short thick addition appear without actually breaking the roving. Variation between the slubs, can be arranged both in size and distance apart.

The above are all single yarns, which I will leave for the present by mentioning that waste yarns condensor and preparation spun, mixture yarns, cotton and wool, printed yarns, all add to the range of yarn for special purposes.

As in singles there is in two-folds an "Ordinary" quality running through as a kind of centre line—for instance, 2-20, 18-19 and 2-30 22, 2-40 25, 2-60 29, or V of finished counts $\times$ about $5\frac{1}{2}$ makes a two-fold very widely used, and unless twist is specially stated otherwise, this twist is generally made. Very wide differences of twist are made, however, to suit requirements, such as in say, 2-30, 6-7, 10-11, 16, 22, 27, 32, 56 turns per inch.

I simply take this count of 2-30 as an illustration, and call attention to the samples showing the effect of different twists.

Numerous styles of "Effect" yarns can be produced on comparatively simple doubling machines by utilising the expansion and contraction of threads of equal or unequal counts according to amount and direction of twist.

If departure be made from using equal counts doubled opposite direction to spinning, i.e., instead of 2-20 14's and 36 be doubled together, you make a start in losing strength and for a particular effect.

To take spiral effects in different styles:—

1. Same direction of single twist but two different counts of yarn with doubling twist opposite to spin-

ning. Generally for comparatively soft effect and not so pronounced as

2. Two single yarns, one opposite direction in spinning twist to the other. Doubling twist is bound to be opposite to one of them, and this one is, therefore, expanded and makes a pronounced spiral around the other thread, which contracts with the doubling twist adding to the spinning twist. Again, principally for soft effects and more for weft than for warp, although used for latter occasionally.

3. One coarse single spin opposite to doubling twist, and one finer thread, already a two or three-fold in a slack twist for a ground thread. This latter twists up tighter with final doubling in same direction and the coarse single expands around it as a regular spiral. Being stronger in the ground thread this style is well suited for warp purposes.

4. More pronounced effects still in regular spirals can be obtained by using doubled yarns in both positions, viz.: Ground a comparatively fine two-fold already slackly twisted ordinary doubling way opposite to spinning. The other thread hard twisted twist on twist, same direction as spinning two or three-fold. If these be doubled together one expands and the other contracts with different effects according to proportions of twist used.

5. Similar to No. 4, but hard-spun singles and hard twists throughout to give a sharp crisp feel.

6. Sponge yarn, also termed Ratine, Tuffle, Truffle, Gimp, is a style of yarn which has been introduced into cloths of a gradually increasing range of styles during the last 10 to 12 years. Instead of coming round in cycles, as most of the "effect" yarns do, variable in time according to fashion's decree, this style of cloth has become so well-established that in my opinion it may be looked upon as one of the regular standard cloths for the future. The gimp or spiral effect is more pronounced than the former styles, varying from comparatively regular gimp effect to a very pronounced rough, irregular effect, although it is "regular in its irregularity" over an extended length. It is a matter of utilising to the full the expansion and contraction due to twisting, sometimes spinning specially for certain effects or introducing coloured yarns. Hard and soft effects are produced as required. It is by far the most widely used yarn of the "Fancy" class.

7. Slub in single yarns or slubs detached in tufts and caught between ground threads before being twisted up are another style and sometimes called Flake yarn.

Others styles, such as Spots, Loops, Snarls, are called for in a lesser degree.

In all of the varieties artificial silk threads or coloured threads can be introduced and add to the effect in various ways at increased cost.

You will see that yarns, as above-mentioned, provide plenty of material for cloth manufacturers to produce endless of variety in cloth, but it is a branch of trade where there should be close co-operation between yarn producers and user. Very often a manufacturer fails to arrive at what he desires through not disclosing all the factors necessary for the yarn maker to know in order to get the best result, and I cannot emphasize too strongly upon manufacturers who wish to develop the use of Effect or Novelty yarns, that it is necessary to have the utmost confidence in the yarn maker in this respect. I am confident that there, is a wide field in the future for utilising existing yarns in new styles of cloth, and for the production of new developments in yarns also.

STURTEVANT HOSIERY DRYERS

The Sturtevant Low Temperature Hosiery Dryer has been developed and perfected to meet the persistent demands of the manufacturers of high-grade, full-fashioned silk hosiery. They have long realized that the quantity and finish of the stockings are greatly improved if the drying is accomplished at low temperatures.

The harshness and injury to the silk fibres caused by the use of high temperatures are effectively eliminated by proper drying at temperatures well below 200 degrees, which is the basis of design and special feature of the Sturtevant Dryer.

A thermostat installed in the dryer maintains the temperature constant and uniform, by means of a self-contained control valve located in the pipe line supplying steam to the heating coils.

The Sturtevant Low-Temperature Forced-Circulation Hosiery Dryer consists of a standardized unit containing three separate compartments. Each compartment holds one (1) dozen stocking forms and is fitted with an individual, direct-connected special drying fan, which circulates the low-temperature air through the compartment at a high velocity, drying the hosiery more uniformly and as rapidly as with the old-style cabinet type of high-temperature dryer.



Front View of Dryer.

Furthermore, there is no interruption of the drying operation or change in temperature within the other two drying compartments while removing and replacing the forms.

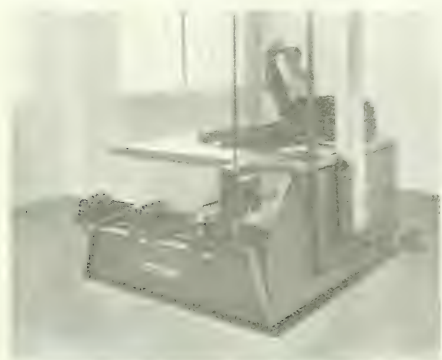
Each cabinet is connected by means of a small galvanized-iron pipe, to an exhaust system installed in connection with all Sturtevant Low-Temperature Forced-Circulation Hosiery Dryers, which positively removes the moisture-laden air from each individual compartment and automatically provides a supply of fresh air for drying the next set.

Dampers connected by a mechanism with the compartment doors, together with the special exhaust system, are so controlled that no warm air can escape into the room, and there is no blast of hot air on to the operator while opening the compartment doors.

On the contrary, almost the instant the door is opened, there is induced a flow of air from the room INTO that individual compartment, which indirectly serves as a ventilating system and eliminates the smoky haze usually present where drying is effected at high temperatures.

Consumption of operation is assured by utilizing the maximum vapor capacity of the air. The power required to operate the fans is no greater than with any other type of cabinet hosiery dryer of the same capacity while the steam consumption is materially less.

The entire insulated top of the cabinet is available for working space and, being at a convenient height, is used as a boarding table, thereby increasing the efficiency of the operator by reducing fatigue, eliminating delays and all unnecessary motions, such as walking and carrying of the forms to a dryer separate from the boarding table.



Rear View of Dryer.

The Sturtevant Low-Temperature Hosiery Dryer may be installed as a single unit or in batteries of any number to suit the requirements of the individual mill.

The cabinet is fireproof, constructed of heavy sheet metal, and thoroughly insulated with not less than one-inch thickness of Asbestos-cell insulation.

Each drying fan is direct connected to a Sturtevant electric motor and fitted with ball bearings. Motors are furnished for either Alternating or Direct Current. All working parts are easily accessible.

A severe running test is made on every motor before leaving our shop, which insures continuity of operation and undivided responsibility for the successful performance of the unit.

SWISS MANUFACTURERS BRING OUT NEW COLOURS.

One of the greatest necessities for dye manufacturers is the production of new and original colours especially in this time of keen competition in all branches of trade.

In the respect the Sandoz Chemical Works of Basle Switzerland are keeping well to the fore and recently have placed two new colours on the market.

Xylene Cyanole F. F. [Blue] and Xylene Red B are both easy, level dyeing colours of great brilliancy and of good covering power. They should be very useful in the dyeing of self shades or combination colours of all wool and gloria (wool and silk dress goods and hosiery yarns).

Method of Application.

Dye at 100° with additions according to shade.

10-15% Glauber's Salt
or 10-15% Bisulphate of Soda

FASTNESS PROPERTIES

Xylene Cyanole F. F.

Solubility (water)	very good
" alcohol	very good
Fastness to light	fairly good
" washing	good
" milling	moderate
" perspiration	moderate
" stoving	good
" carbonizing	good
" acids	good
" alkalis	fairly good
" rubbing	very good
" hot pressing	very good
Cotton checking threads	pure white

Xylene Red B

Solubility (water)	very good
" alcohol	very good
Fastness to light	fairly good
" washing	good
" milling	moderate
" perspiration	moderate
" stoving	good
" carbonizing	good
" acids	very good
" alkalis	fairly good
" rubbing	very good
" hot pressing	very good
Cotton checking threads	pure white

The Sandoz Company also produce some excellent blacks the following two Chloramine blacks being especially useful in the dyeing of unions and mixtures of wool cotton and silk.

Chloramine Black N is a direct cotton colour being bright and of a greenish cast and will dye both animal and vegetable fibres equally and of similar shade. Of course it may be usefully employed either in conjunction with blues and more violet-blacks or alone on pure cotton yarns and pieces. It is much used in dyeing silk wool and cotton unions. It may be discharged to a good white by the usual means.

Chloramine Black F. dyes a fine intense black. It is very fast to acids, alkalis and stores well. It is much used for filling up unions, dyes well in a tepid or cold bath.

FASTNESS PROPERTIES

Solubility	Very good
Fastness to light	good
" to acids	good
" to alkalis	Very good
" to ironing	good
" to perspiration	good
" to rubbing	good

Chloramine Black N.

Solubility	Very good
Fastness to light	good
" to acid	Very good
" to alkalis	good
" to stoving	good
" to milling	good
" to hot pressing	good

Application of Chloramine Black N. and F.

On Cotton: This follows the usual method for direct Cotton Blacks with suitable additions of Glaubers Salts and Soda Ash.

On Half Wool: Dye in a neutral bath with an addition of 10-40 grammes Glaubers Salt per litre dye liquor.

On Half Silk: Dye in a neutral boiled-off soap liquor with addition of Glaubers Salt.

On Silk: Dye in a neutral or slightly acid boiled off soap bath with addition of Glaubers Salt. The Bath may be finally exhausted with Acetic Acid.

SAFETY CONVENTION TORONTO

(By Our Toronto Correspondent.)

Tuesday and Wednesday, April 4th and 5th witnessed the Joint Convention of the organizations responsible for safety work. The organizations represented were Canadian Manufacturers' Association, Workmen's Compensation Board, Department of Labour, Ontario Safety League, Ontario Pulp and Paper Makers' Safety Association, Electrical Employers' Association, Lumbermen's Safety Association, Industrial Accident Prevention Association.

The 300 registered delegates gave marked attention to a series of exceedingly able papers and addresses which evinced a highly altruistic viewpoint. The economic factor, while essential to any statistical appreciation of the accident problem, was subordinated to the humanitarian motive in prevention.

The Tuesday morning session was under the Chairmanship of Dr. P. E. Doolittle, President of the Canadian Automobile Association and a Vice-President of the Ontario Safety League, whose cheerful greeting started the Convention auspiciously. Controller Nesbitt spoke the official welcome of the City of Toronto, voiced the active sympathy of the Queen City with all that pertained to accident prevention, and invited the delegates to use freely the information and service organizations of the city. Dr. Doolittle humorously noted that no reference had been made to the keys of the city.

At the afternoon session under the Chairmanship of W. C. Coulter, Chairman of the Ontario division, Canadian Manufacturers' Association, Mr. Samuel Price, Chairman of the Workmen's Compensation Board, spoke of the Ontario Accident Prevention Problem. He claimed that Ontario was now the most liberal of all the provinces in the matter of provision for compensation. In 1921 the bill for the year was \$6,189,000 or a daily average of \$21,000, and in the seven years of operation \$28,000,000 had been paid out in Ontario.

In 1921 there were 386 fatal and 45,191 other accidents, and in the seven years the total casualties were equal to the combined populations of Hamilton, Ottawa, and Windsor. Two thirds of the accidents were not due to the operation of machinery, and a very large proportion of all industrial accidents happened to or were brought about by inexperienced men.

One striking and typical case of preventable loss was that of a man who slipped and caused an abrasion of the skin about the size of a ten cent piece. He didn't have it cleansed and died in a few days of blood poisoning, leaving a widow and two children and causing direct expense of \$8,000.00.

Miss Muriel MacKay spoke on First Aid and Industrial Nursing, showing the value of the Industrial Nurse and the kind of work she can do to improve morale. Miss MacKay is the nurse of the Hydro

Electric Power Commission, and is Chairman of the sub-committee on Industrial Nursing of the Public Health Section of the Canadian Association of Trained Nurses. She warned against making the industrial nurse a sort of detective and showed the value of her work in visiting.

Dr. C. L. Starr, Professor of Surgery, University of Toronto, spoke on the surgical treatment of accidents, strongly advising that all patients for their own sakes be given some kind of work as soon as possible after accidents. He said that in all cases now very close attention was given to restoration of function in order to prevent permanent disability cases.

S. J. Dickson, Chief Constable of Toronto, followed with a paper on Traffic Accidents. In Toronto there were 1278 accidents in 1921; 560 of the victims were juveniles and 177 were under 5 years, 782 were motor accidents, of which 72 p.c. were due to the carelessness of pedestrians.

The event of the Convention was the banquet presided over by Sir John Gibson, K.C. M.G., President of the Ontario Safety League, with the inimitable A. Munro Grier, K.C., as Toastmaster. The addresses were by A. E. Dawson, General Manager of the Toronto Casualty and Marine Insurance Company, who spoke of the economic aspects of accidents, and Lt. Col. W. N. Ponton, K.C., of Belleville, who spoke of the accident problem from a humanitarian viewpoint. Both these addresses were of a high order. Mr. Dawson said that in providing greater safeguards, employers were preparing the best common ground upon which they and their employees could meet.

Colonel Ponton made a telling appeal in the matter of suffering, anguish and bereavement, and urged broad sympathy based on sincere Christianity.

The toastmaster then proposed the health of Sir John Gibson, a former Lieut. Governor of Ontario, thus having represented the crown, who in a brief speech spoke of the activities of the Ontario Safety League.

Wednesday morning session under the Chairmanship of Mr. Geo. Carruthers, President of the Ontario Pulp & Paper Makers' Safety Association, was addressed by J. H. Martin, Division Plant Superintendent of the Bell Telephone Co., Toronto, on the Accident Problem from an Educational Standpoint. This address called out one of the most interesting discussions of the Convention, showing the very practical value of education for prevention, working from the foreman down. Foremen who make clear accident records over certain periods receive buttons of various types. The speaker referred to cards and notices used about the plant.

Dr. M. M. Crawford, Coroner of the City of Toronto cited the history of a number of "General Accidents" and made comments. His address was forceful and direct. He drew attention to the fact that a coroner's jury has very wide powers of investigations in connection with contributing causes of accidents, much wider than civil courts, though it was not a trial court, its duty being that of investigation only. He said also that while he was not a prohibitionist, he was of the opinion that one drink of intoxicating liquor was enough to warp a man's judgment, and that no one who had had a drink should be allowed to drive a car.

After the Luncheon, presided over by D. A. Cameron, President of the Board of Trade, notably interesting addresses were given by J. R. Shaw, of Canada Furniture Manufacturers, Woodstock, Vice-President Canadian Manufacturers' Association, and Wm. Valley of the Council of the Trade and Labour Congress of Canada.

British Trade News

(From Our London Correspondent)

London March 28, 1922,

The Lancashire cotton industry is receiving some severe knocks from the Indian Government. It is being argued that under the Government of India Act it is the duty of the Secretary of State to ensure that no measures adopted by the Legislative Assembly are antagonistic to the interests of other parts of the British Empire. The present situation is that the Legislative Assembly in India has decided in favour of an import duty of 11 p.c. and an excise, or countervailing duty of $3\frac{1}{2}$ p.c., leaving a margin of $7\frac{1}{2}$ p.c. in favour of the native manufacturer. Lancashire mill owners urge that the import duty should be 11 p.c. and the excise duty 10 p.c., thus reducing the measure of protection afforded to Indian mill owners to 1 p.c. If an alteration is not effected Lancashire cotton goods in the export trade to India—one of the great British markets—will be greatly prejudiced and cotton millers in England see that they have big rocks ahead. The subject has been engaging considerable attention for sometime and deputations are now coming to London to tackle the matter in earnest.

Trade Outlook

The general feeling prevails that British trade and industry have turned the corner and the outlook is more hopeful on home and overseas account. A résumé of the different industries may be summed up as follows:—

In hosiery employment is fairly good. With the approach of finer weather there is an inclination for a brisk demand for coloured ribbed cashmere hose. Inquiries are also being made for autumn underwear. The market is more confident, with a more reliable basis in regard to wool and spinning. The imperative necessity of alleviating in the next Budget the heavy burden which the hosiery industry is called upon to bear in taxation is strongly urged. Manufacturers are experiencing the greatest difficulty in meeting taxation without borrowing from bankers or entrenching upon capital. This stranglehold is undoubtedly killing enterprise and initiative, and preventing that recovery and expansion of trade which alone will solve the problem of unemployment.

The cotton mills have not got back to normal. There is, however, a good improvement both in trade and employment. Exports show a slight increase, but taking things generally, the expectations of millowners are not yet realised.

In all sections of the woollen industry there are still thousands of looms and other machinery lying idle, or being partially run. The industry is not at all satisfactory from sellers' and mill owners' points of view.

Exports

The export trade is still unsettled and the latest figures which cover February trading are not encouraging. They give some indication of how things are moving. "We want to see our exports 80 p.c. up before we can begin to talk a revival in trade", said a millowner to me the other day, "for at present we are just hanging together."

Wool-Combing Difficulties

Operatives are still holding up the wool-combers and a dictatorial attitude has developed. Owing to

the employment roll being high, and the policy of the trade unions to prevent men from working overtime (the idea being to encourage more employment) for which there is a set scale of wages, wool-combers cannot solve the difficulty of meeting the demands in manufacturing circles. The result is that more wool is being sent to the continent to be combed, the production of fine tops in Bradford alone being below what is needed. Topmakers have advanced their prices 2 cents to 4 cents per pound for fine tops, partly on account of wool prices rising and partly on account of the increased demand.

In February 50,224 cents of wool left the country, compared with 26,197 in February 1921 and 21,603 cents in 1920. This is due to the operative wool-combers' attitude. The exports of wool noils dropped to 10,048 cents, compared with 11,250 in February 1921 and 11,407 cents in 1920.

Wool Position Strong

We are still in the midst of the wool sales, with another ten days to run. The market has been rising and falling in prices, but the demand is good, Germany in particular absorbing large quantities. As I estimate roughly the prices are as follows in cents:—

	Jan. 1921	Jan. 1922	March. 1922.
Superior fleeces, 70's	120	104	110-115
Good pieces, 60's	84	86	80-82
Fine cross breds, 56's	56	52	50-51
Crossbreds 46's	36	26	26-27

Germany is paying ready money for all shipments and this fact gives some indication of the healthy state of the textile industry in the "Fatherland." The figures I quote above show the position this week. All fine wools continue to be above the pre-war prices, but coarse wools are much below the pre-war level, which shows that the demand still lies for fine woollen goods not only in the home market, but in the markets overseas. Americans, Canadians, Swiss, and Germans, as well as French, are competing for the fine qualities and it is this competition that keeps prices soaring, the demand for merinos being persistent owing to the public favoring fine, soft-handling goods.

In Bradford the wool market has a strong tone, but spinners and manufacturers are not inclined to follow the lead given by the big London sales in prices. Therefore, Bradford shows a certain amount of activity and the prices are firm. Most topmakers are well booked ahead. Hosiery yarns are also active in Bradford and reports say that more business is being done in coatings.

Wages In Industry

The cost of living in England has fallen to 86 p.c. compared with 141 p.c. in March 1921. But wages in the textile industries are still double the pre-war rates — if not over it. Manufacturers are looking out for a reduction in taxation and a reduction in wages to enable them to compete in the world's markets.

BOOM IN PETERBORO

Peterboro, Ont., March 26.—Industrial conditions in Peterboro are showing a marked improvement. Local factories are increasing their working forces, and a number of them are contemplating extensions.

West Australian Wools

Breeding for Quality and Character.

No State in the Commonwealth has shown such development in sheep breeding and wool growing as West Australia, in which State remarkable progress has been made during the past twenty-five years. The wool grown to-day is a trifle lower in quality, but it is certainly better on the whole; it has more length, is better prepared for market, and exhibits practically all the sound characteristics which wool should possess. The objectionable burr has not yet become prevalent in the Western State and is not found in the majority of the clips, though it is present in some. It has been said that Australia will never grow merino sheep without the burr plant, but whether that be so or not, we hope that West Australian pastoralists will try to provide good feed without cultivating the burr plant.

Swan River wools, which is the name often employed in describing the wool from West Australia, is particularly popular with Bradford topmakers owing to the sound, shafty combing characteristics of the majority of clips. Murchison wools have shown greater development than any other produced in the Western State, and this is largely due to the progressive pastoralists and the determined attempt to produce that which the trade wants. One of the best clips comes from Boolardy, and a recent issue of "The Australasian" contained an interesting article by "Bendleby" on pastoral conditions prevailing in the Murchison district.

Fighting Climatic Influence.

Dealing with sheep breeding, the writer states that the pastoralists of West Australia must have recourse from time to time to the parent studs in the South. "The majority of back country stud merino breeders recognise this. It is the climatic influence against which they are continuously fighting. It cannot altogether be a matter of feed, water, or rainfall, for, if we come to consider the great natural advantages of the immense Mitchell grass plains, open rolling Downs, in Central Queensland, where the rainfall is a matter of 17 to 20 inches, and the feed is of the best and most varied description, grand summer grasses, chockful of virtue, it seems somewhat incomprehensible that in this instance also recourse must periodically be made to the southern studmasters.

"Of far inland merino studmasters there are probably none more venturesome in the interests of stud merino breeding than those located in the Murchison district, 500 miles north of Perth, and 300 miles from the seaboard at Geraldton. Regarding three of these, the writer has had personal experience—Murghoo, Boolardy, and Wandarrrie.

Periods of Drought.

"With regard to Murghoo, no small amount of success has been met with, but there must have been some very anxious times in order to save the stud ewes during periods of drought, seeing that this property is a considerable distance away from the railway. In the past, Boolardy felt this distance, and it now mainly works in conjunction with Cranmore Park, a stud-raising property farther south in the Moora district, although every advantage will in future be taken of Boolardy itself for developing frame in the young sheep, both male and female.

"Wandarrrie is more fortunate in the matter of rail-

way situation than either of the above. With this advantage, stud breeding can be prosecuted to a greater extent than has hitherto been the case, although up to the present time some pleasing progress has been made. The stud ewes, 350 in number, average 13½ lbs., which sold up to 25½d.

"On the coast, behind Geraldton, Mr. W. Mackenzie Grant, of Newmarracarra, has for many years past been breeding stud merinos, tenaciously clinging to the Murray type. From this foundation he some years ago set about the building up a stud in the far interior in the Murchison district, but had the misfortune to have the greater part of it wiped out by a severe drought. It is in dealing with a situation of this description that proximity to a railway is such a valuable asset. The stud ewes can either be got away south into those parts of Western Australia, which have hitherto had no experience of drought, or else feed can be railed up to them from the Midlands and other parts.

"In the matter of wool growing, the Murchison district possesses many advantages over other great inland districts, where stud merinos have been and are being attempted. The thermometer can range just as high, and the hot days during the summer months are quite as numerous as in Central Queensland or in the north of South Australia. But there is something in the feed in the Murchison, and in the abundance of its fresh water supplies, as well as in the shade extending in so many instances right up to the waters, that is peculiarly helpful, and which is not to be met with in other districts with the same low rainfall in the Eastern States.

"Although size in merinos is to be seen at its best in the back country of each State, it is not impossible to produce that size by special feeding. Either fodder crops must be grown or special feed must be provided to enable merinos to hold their size in 'sheep-to-the-acre' country. Such at least is the opinion of a leading studmaster in Riverina, whose sheep are run at the rate of one to three or four acres. He contends that this principle will be found to apply all over Australia at the present time.

Sheep to the Acre.

"In making this qualification of 'at the present time' this studmaster is probably, quite correct, because nearly all the 'sheep-to-the-acre' country in each and every part of Australia is sheepsick, having been continuously grazed for any period of time up to 70 and 80 years. But the statement would not have been so correct in the pioneering days, even in the Western district of Victoria, where it is a well-accredited fact that merinos in the fifties and sixties developed much the same size of frame as they now do in the back country. 'Sheep-to-the-acre' country usually has the concomitant disadvantage of a severe winter, either excessively wet or excessively cold, individually and collectively responsible for worms, the greatest of all enemies to the development of size and constitution.

A Hackneyed Term.

"When the hackneyed term of 'sheep-to-the-acre' country comes under meticulous examination it will be surprising to find how very few districts in Australia can, year in and year out, be thus accurately described. Some places can undoubtedly stand that strain during good seasons, or even during normal seasons, but it is when the abnormal happens along that the average be-

comes upset, and over a series of, say, 16 years has to put up with some discounting. Many a property which really will carry a sheep to the acre, whatever the season, is not the class of country on which to run merinos, for the reason that in nine cases out of ten the feed is on river flats or swampy areas, where the grass is green all the year round.

"Merinos require a certain amount of summer conditions and of dry feed. The policy of cultivating large areas of lucerne in the interests of merino ram-breeding, as is now being so generally done in the middle north of South Australia is coming in for much adverse criticism among back-country flock-masters, who have been in the habit of drawing their supplies of rams from this particular quarter. Young rams which have spent the greater part of life on lucerne do not take to the hard conditions of the back country as readily as past generations have done. They take more time to acclimatise, and have not the same vigorous constitutions, in the opinion of certain flock-masters in the back country of Western Australia. One of them recently told me that he now found it necessary to keep his rams back at least twelve months after arrival before he used them, whereas before the days of lucerne he had been in the habit of using them straight away.

"That there is something in this contention most people will admit, even among the ranks of those who are growing lucerne. Those who are giving their young rams access to the indigenous grasses on which previous generations were bred, and are leaving them at liberty to range among the lucerne as and when they please, are doing something towards correcting faults against which my informant is complaining. Lucerne-feeding to merinos needs to be handled with more skill than the majority suppose. The effect upon the wool is decidedly harmful, after a certain time imparting a dingy colour, and an amount of yolk from which the wool were better free."

(Wool Record and Textile World.)

KNITTING ARTS EXHIBITION

Among the firms who are exhibiting at the Eighteenth Annual Knitting Arts Exhibition which is being held under the auspices of the National Association of Hosiery and Underwear Manufacturers at the Commercial Museum, Philadelphia the week of May 22nd are the following:—

Aberfoyle Mfg., Co. Empire Bldg., Philadelphia.
 Acme Knitting Machine & Needle Co. Franklin, N. H.
 Jacob K. Altemus, Philadelphia.
 The Ballinger Co., 12th & Chestnut St., Philadelphia.
 Blackmer Rotary Pump Co., 1119 Real Estate Trust Bldg., Philadelphia.
 H. Brinton Co., 213 Race St., Philadelphia.
 Cannon Mills Inc., 213 Chestnut St., Philadelphia.
 Cooley & Marvin Co., 15 Ashburton Place, Boston.
 The Crawford Mfg. Co., New Brunswick, N. J.
 Dubied Machinery Co., 139 Franklin St., New York City.
 Eastman Machine Co., 779 Washington St., Buffalo, New York.
 Eclipse Textile Devices, Elmira, N. Y.
 Fidelity Machine Co., 4015 Paul St., Frankford, Phila.
 Fletcher Works, Glenwood Ave., & 2nd St., Phila.
 The J. B. Ford Co., Wyandotte, Mich.
 Foster Machine Co., South Broad St., Westfield, Mass.
 Franklin Needle Co., 155 North Main St., Franklin, N. H.
 Franklin Process Co., Providence, R. I.
 The Grosser Knitting Machine Co., 260 West Broadway, New York

Memphill Company, Pawtucket, R. I.
 John W. Hepworth & Co., Lehigh Ave., & Mascher St., Philadelphia.
 Hussong Dyeing Machine Co., Groveville, N. J.
 International Nickel Co., 67 Wall St., New York.
 Kaunagraph Co., 40 So. Seventh St., Philadelphia.
 The Klauder-Weldon Dyeing Machine Co., Bethayres, Pa.
 A. Klipstein & Co., 644 Greenwich St., New York.
 Laconia Needle Co., Laconia, N. H.
 Leighton Machine Company, Manchester, N. H.
 Oswald Lever Co., 11th & Cambria Sts., Philadelphia.
 Link Belt Co., Chicago, 111.
 The Merrow Machine Co., 28 Laurel St., Hartford, Conn.
 Metropolitan Sewing Machine Corp., Nyaack, N. Y.
 Morse Chain Co., 10 So. 18th St., Fuller Bldg., Phila.
 Oakley Chemical Co., 22 Thames St., New York City.
 Paramount Hosiery Form Drying Co., 337 W. Madison St., Chicago.
 The Permutit Company, 440 Fourth Ave., New York.
 The Philadelphia Drying Machinery Co., 3351 Stokely St., Philadelphia.
 Proctor & Schwartz Inc., 7th & Tabor Rd. Phila.
 The Roessler & Hasslacher Chemical Co., 709 Sixth Ave., New York.
 Scott & Williams Inc., 366 Broadway, New York.
 Smith Drum Co., Allegheny Ave., Philadelphia.
 The Solvay Process Co., 22 William St., New York City.
 Southern Textile Machinery Co., 433 South 3rd St., Paducah, Ky.
 Standard Machine Co., 340 N. 12th St., Philadelphia.
 Textile Machine Works, Reading, Pa.
 Tølhurst Machine Works, Troy, N. Y.
 Union Special Machine Co., 12th & Arch St., Phila.
 Universal Winding Co., 90 South St., Boston.
 U. S. Hoffman Machinery, 105 Fourth Ave., N. Y.
 Universal Cutter Co., St. Louis, Mo.
 Willcox & Gibbs Sewing Machine Co., 1709 Chestnut St., Philadelphia.
 Wildman Mfg., Company, Elm & Astor Sts., Norristown, Pa.
 Alfred Wolstenholme & Sons Inc., Allegheny Ave., & 24th St., Philadelphia.
 Thos. Wolstenholme Sons & Co., Inc., 3300 Frankford Ave., Philadelphia.

CANADIAN CO-OPERATIVE WOOL GROWERS SUCCESSFUL YEAR

The fourth annual meeting of the above association was held at their offices on the 22nd March.

The president spoke of the good position in which the association found themselves after the difficult period through which they had just passed. The state of the wool market over this period had been very trying, and the position had been made more acute by the Emergency Tariff, levied on wool by the United States Government. Steps had, however, been taken to sound the European market and some trial shipments had been sent to the London Wool sales, and had met with encouragement there. It was chiefly to the Canadian Manufacturers, however, that the last clip had been sold, and it was hoped that they would continue to use Canadian home grown wool whenever possible. Even to day the wool market was far from normal, large quantities of wool were being held over in all classes, except the fine wool class, where the supply was not yet equal to the demand.

You can Depend on the Quality

THE care taken in the selection, and grading of the wool products we sell is your best guarantee of quality.

We shall be pleased to quote you on any of the following:

1. Standard qualities of **Tops** (Colonial & English.
2. " " " **Greasy and Scoured Matchings**
3. " " " **Carbonized Noils**
4. " " " **Pulled Worsted Thread Waste**

We also specialize in **English** and **N.Z. pulled and scoured wools** suitable for the Woolen and Hosiery trade.

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Your Selling Agent
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peroxide bleached goods,

Why?

Because the public wants
A permanent white;
unweakened by bleaching;
soft and elastic;
free of chemicals and odor.

The cost is not increased.

We furnish full information.

THE ROESSLER & HASSELAUER
CHEMICAL CO.

New York

TORONTO DISTRICT NOTES

By our Toronto Correspondent

Toronto, April 5. The outstanding event of this week-end in Toronto has been the death of Sir John Eaton, head of the T. Eaton Company, Limited, Canada's greatest retail business. This company's very large manufacturing, mail order, and printing establishments, in addition to the retail departments were closed from Thursday night to Tuesday morning. On Monday afternoon most of the large mercantile houses were closed for the funeral. This sad event, therefore, has affected the retail drygoods situation in the city both directly and indirectly. A notable feature was the respect and sympathy shown by the large retail and competing business and their tribute to the fine personality of Sir John.

The underlying and one of the most hopeful features tending to strengthen confidence is the fact that stocks have steadily risen in the past few weeks and profit taking has only forced minor recessions. Over \$30,000,000. of Canadian obligations for bond interest and dividends maturing April 1st have been met with scarcely a flutter. These facts contribute in a large measure to the sense of security that persists in the face of hand to mouth ordering.

In the rural communities much interest and speculation centres round the Provincial Bank system inaugurated recently by the Government of Ontario. Concern and skepticism are evidenced by the conservative financial interests. In other quarters there is hope that rural trade will be facilitated. There is expressed a fear that credits may be too readily extended as a fillip to the system and in such cases leave the debtor under a load too heavy for his resources and comfort.

Actual conditions show, if no great advance, at least a brightening in spots.

While skirts remain short the hosiery business will continue to reflect the influence of Mrs. Grundy's edict that no darns be visible, so the hosiery mills fare well.

Strong fast colors are in demand, dye merchants report active business characterized by rush orders for small quantities.

Ginghams continue in fair demand and novelty homespun. Ladies waists reflect the popularity of the one piece and slip over dress. This line of business being inclined to dull.

Some activity is noted in sheetings but is rather of a seasonal nature.

There are reports from some rural centres that business is good in general retail merchandise.

MANUFACTURE OF ASBESTOS

The protection of the asbestos industry of the Province of Quebec is a matter which the Canadian Manufacturers' Association is taking up with considerable vigor. The Association is taking steps to urge upon Government of the Province to legislate, either exercise tax or royalty, to prevent the United States from taking the province's raw asbestos for manufacture across the border, and manufacturing purposes, and refusing admission of Canadian manufactured asbestos by imposing a prohibitive tariff. Quebec manufacturers of asbestos are much agitated over the plans of the Senate at Washington. It seemed likely that the Fordney tariff bill, which provided for a combination of straight and ad valorem duties on asbestos manufactured goods that would amount to anywhere from 52 per cent to 80 per cent, is being purposely made prohibitive.

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Huddersfield, England.

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Toronto

Montreal.

Canada allows manufactured asbestos products to come in under a 25 per cent duty, although we produce the raw material. The new American proposals are evidently intended to completely keep Canadian asbestos manufactured goods out, with the clear intention of forcing Canadian producers to send the raw asbestos to the United States for the employment of their own factories.

It is pointed out that Quebec province has practically a monopoly of the supply of asbestos, 90 per cent of raw asbestos used in American factories coming from this province, with no tax at all except a 3 per cent royalty, the raw material entering the United States duty free. At the same time importations by the United States of manufactured asbestos were negligible.

Last year the United States imported from this province 145,283 tons of raw asbestos, valued at \$7,690,165, while the imports of manufactured asbestos from Quebec province were only \$64,473.

It was suggested that the Government should impose a special excess tax on raw asbestos exported to the United States of one-half the United States tariff imposed on Canadian manufactured asbestos, the revenue to form a fund for a bounty of the difference between the present Canadian and the new American tariffs.

As an illustration the Fordney bill provides for a duty of 3½ cents per square foot, plus 10 per cent ad valorem, on colored asbestos shingles, the Canadian make selling wholesale at \$5 per 100 feet. The proposed duty would thus be 80 per cent, or \$4 duty on \$5 worth of goods, a prohibitive impost.

A. M. Spear, of the Asbestos Manufacturing Co., Ltd., considered that if Canada is to send her raw asbestos to the United States we should at least be given a reasonable opportunity to sell our manufactured asbestos goods there.

It is argued that steps should be taken, making it impossible for the Fordney tariff to make this province a mere exporter of raw asbestos to American factories, with the necessity in many cases of later importing the manufactured products and paying duty to bring them into this country.

IRISH LINEN TRADE RECOVERY

The improvement in the Irish linen trade says the Irish Draper, is one of the most cogent features of the great recovery in the industrial market. With the opening of the year, there came a little ripple to show how the wind was blowing. Now, as we enter on the business year proper, we find that a steady demand has set in. True it is that buyers continue to act with caution. They cannot be blamed for that. Sorting-up orders are increasing, we learn, not only in size, but in frequency. But against that we know that the mills are busier than they have been for years—at least since war production was the chief drawing power. That there is still weakness here and there is indisputable. Curtailment in the number of working looms in some sections is freely discussed; but this need not affect the cheerful outlook since the more important ends are kept very busy, and in damasks, for instance, which are a special feature, factories are being pressed for early delivery.

Accounts from the United States are reassuring. Demand there has grown to fine bulk in recent weeks. The total amount of sales carried out during a single week of last month from the New York stock is de-

scribed as quite satisfactory, and as entailing further business for manufacturers for replenishment purposes. It seems that the fancy for coloured linens in the States is greatly on the increase. This means new business on a considerable scale for Belfast merchants. Here also quick delivery is insisted upon, and it is inspiring to learn that labour is equal to the call, and is making forward strides to honour it. Dress goods are a safe market just now in the States, in Canada, and in other shipping markets. The tendency, too, as we read, is broadening. It is remarked that steadiness in cotton reacts favourably upon the demand for linen and union goods.

Flax is a difficulty. Spinners complain of the paucity of supply. Indeed, it is remarkable how well the manufacturing processes have been sustained in view of the shortage. Now that the sowing season is at hand, Irish farmers should be more than ever alert. Official returns tell of a serious laxity with regard to our flax crop. Last season's acreage was too small. The yield was very variable, and mostly, we fear, untrustworthy. This should not be. With our many natural advantages, and the proximity of some of the world's best manufacturing centres, Ireland should play a leading part in the production of raw material. Farmers have, no doubt, grievances as to purchase methods, price, etc.; but the fact remains that a sound, progressive market is at their doors, and it is little short of deplorable that they do not extend flax growing and rest assured of the better reward that awaits their toil with the improving conditions that have now set in.

A limited supply of raw material, and that not always of superior quality, is a grave drawback to spinners and merchants. They cannot be expected to operate with any abundance of security while this state of matters pertains. Intensive work in research has done much to inspire new hopes for Irish flax. The farmer, however, is the pivot upon which everything rests. If he is wisely guided at a time when revival is not only in the air, but is an actuality to be reckoned with, he will not hesitate about enlarging his showings and seeing that they are made with the best quality of seed and husbanded with a care and skill that will enable him to enjoy to the full the rich fortune that awaits the staple industry.

THE LATE E. H. JACOBS

It is with sorrow that we learn from Danielson, Connecticut, of the death of Mr. Edward Hill Jacobs, president and founder of the firm of E. H. JACOBS Manufacturing Co. manufacturers of all kinds of leather, duck, and ticking loom supplies for mills. Although Mr. Jacobs retired from active business nearly fifteen years ago, he always maintained a close and genuine interest in this important industry. Mr. Jacobs was a pioneer inventor of this type of loom supplies and he will be widely missed.

INTERNATIONAL SILK EXPOSITION

The International Silk Exposition, will be held under the auspices of The Silk Association of America and The Silk Travelers' Association, Inc., from February 5 to 15, 1923. Three floors of the Grand Central Palace, New York, have been reserved for this show, which will run for a period of ten days.

INDEX TO MILL SUPPLIES

- Acid-Resisting Paint:**
McArthur, Irwin, Limited
Dominion Paint Works Ltd.
Canadian Johns-Manville Co., Ltd.
- Albion:**
Roessler & Hasslacher Chemical Co.
- Aniline Oil:**
British Dyestuff Corporation Huddersfield Ltd.
A. Klipstein & Co. Ltd.
McArthur, Irwin, Limited
- Aniline Dyes:**
Atteaux Dyestuffs & Chemicals Co., Limited
British Dyestuff Corporation Huddersfield Ltd.
L. B. Holliday & Co., Ltd.
A. Klipstein & Co.
Geigy Company, Inc.
Pollack Brothers & Co.
McArthur, Irwin, Limited
Sharpe C. A. Ltd.
T. D. Wardlaw & Son
- Automatic Feeds for Cotton and Wool:**
Jefferson, Edward.
Leigh & Butler.
Saco-Loell Shops.
Sargent's C. G. Sons Corp.
Whitlin Machine Works.
- Automobile Gears:**
Diamond State Fibre Co., Canada, Ltd.
- Bagging Machines:**
Sargent's C. G. Sons Corp.
- Baling Presses:**
Bredannaz, Louis & Son.
- Barrels:**
Diamond State Fibre Company.
- Baskets:**
Diamond State Fibre Company.
- Beamers:**
Crompton & Knowles, Loom Works
Saco-Loell Shops.
- Belting:**
McLaren, The J. C., Belting Co., Ltd.
- Belt Dressing:**
McLaren, The J. C., Belting Co., Ltd.
- Bleaching Powder:**
Atteaux Dyestuffs & Chemicals Co., Limited
McArthur, Irwin, Limited
Can. Salt Co., Windsor, Ont.
Nichols Chemical Company
- Bleaching Materials:**
Atteaux Dyestuffs & Chemicals Co., Limited
A. Klipstein & Co. Ltd.
McArthur, Irwin, Limited
Roessler & Hasslacher Chemical Co.
Nichols Chemical Co., Limited
Sharpe C. A. Ltd.
- Boards:**
Diamond State Fibre Company.
- Bobbins, Spools, & Bobbins, Etc.:**
Canada Spool and Bobbin Co.
Jefferson, Edward.
Leigh & Butler.
Watson, L. S. & Co.
- Boxes—Fibre:**
Diamond State Fibre Co., Canada, Ltd.
- Boiler Graphite:**
Dominion Paint Works Ltd.
- Boiler Feed Water Purifiers:**
Scaife, Wm. B. & Sons Co.
- Brick Paint:**
McArthur, Irwin, Limited
Sharpe C. A. Ltd.
- Brushes, Steam:**
David Gessner.
Jefferson, Edward
- Snurr Pickers:**
Jefferson, Edward.
Leigh & Butler.
Sargent's C. G. & Sons.
- Cans:**
Diamond State Fibre Company
Canvas Waterproofing Paint:
Dominion Paint Works, Ltd.
- Carbonizing Machinery:**
East Jersey Pipe Corporation.
Jefferson, Edward.
Sargent's C. G. & Sons.
Tolhurst Machine Works.
Whitehead, Emmans, Ltd.
- Card Clothing:**
Bredannaz, Louis & Son
Crabb, Wm. & Co.
Leigh & Butler.
T. D. Wardlaw & Son
Watson, L. S. & Co.
- Card Grinding Machinery:**
Leigh & Butler.
Roy, R. S. & Son Company
Saco-Loell Shops
Whitlin Machine Works.
- Carding Machinery:**
Jefferson, Edward.
Leigh & Butler.
- Saco-Loell Shops.**
Whitlin Machine Works.
- Card Clothing Strickies:**
David Gessner.
- Cards:**
Saco-Loell Shops.
Jefferson, Edward.
Leigh & Butler.
Whitlin Machine Works.
- Carpet Machinery:**
Crompton & Knowles Loom Works
Saco-Loell Shops.
- Caustic Soda:**
Canadian Salt, Co.
Atteaux Dyestuffs & Chemicals Co., Limited
McArthur, Irwin, Limited
Nichols Chemical Company
Whitlin Machine Works.
- Centrifugal Dryers:**
East Jersey Pipe Co.
Imperial Trading Co.
Watson, Laidlaw Co.
Tolhurst Machine Works.
- Chemicals:**
Atteaux Dyestuffs & Chemicals Co., Limited
British Dyestuff Corporation Huddersfield Ltd.
Dow Chemical Co.
A. Klipstein & Co. Ltd.
McArthur, Irwin, Limited
Nichols Chemical Company
Sharpe C. A. Ltd.
The Roessler & Hasslacher Co.
- Chloride of Lime:**
Atteaux Dyestuffs & Chemicals Co., Limited
Canadian Salt Co.
Grasselli Chemical Co.
A. Klipstein & Co. Ltd.
McArthur, Irwin, Limited
Nichols Chemical Co.
Sharpe C. A. Ltd.
Watson, Jack & Co. Ltd.
- Cleaning Waste Machinery:**
Jefferson, Edward.
Leigh & Butler.
Tatham, Wm., Ltd.
Watson, Jack & Co. Ltd.
Whitlin Machine Works.
- Clutch Linings:**
Diamond State Fibre Company.
Canadian Johns-Manville Co., Ltd.
- Cloth Presses:**
Gessner, David.
- Combs (Wool and Cotton):**
Crompton & Knowles Loom Works
Jefferson, Edward.
Leigh & Butler.
Philadelphia Textile Machinery Co.
Gessner, David.
Whitlin Machine Works.
- Combs—Fibre:**
Diamond State Fibre Co., Canada, Ltd.
- Concrete Paving:**
McArthur, Irwin, Limited
Sharpe C. A. Ltd.
- Concrete Floor Hardeners:**
McArthur, Irwin, Limited
- Cooling and Conditioning Machine:**
Jefferson, Edward.
- Cooling Frames, Cloth:**
Gessner, David.
Jefferson, Edward.
- Cotton:**
Dominion Textile Company.
- Cotton Machinery:**
Lord Bros.
Crompton & Knowles Loom Works
East Jersey Pipe Corporation.
Draper Corporation.
Foster Machine Co.
Jefferson, Edward.
Klauder Weldon Dyeling Mach. Co.
Lamb J. K. Textile Machinery Co.
Leigh & Butler.
Roy, R. S. & Son, Company.
Saco-Loell Shops.
Stafford Co. The
Tolhurst Machine Works.
Wildman Mfg Co.
Whitehead, Emmans, Limited.
Whitlin Machine Works.
- Cotton Openers and Leppers:**
Leigh & Butler.
Lord Bros.
Saco-Loell Shops.
Whitlin Machine Works.
- Cotton Waste Machinery:**
Lord Bros.
Jefferson, Edward.
Leigh & Butler.
Saco-Loell Shops.
Whitlin Machine Works.
- Cotton Yarn Dyers:**
Saco-Loell Shops.
- Crayons:**
Lowell Crayon Co.
- Cylinder Covering:**
Dodge, C. S.
- Dobbies:**
Crompton & Knowles Loom Works
- Conditioning Machines:**
Jefferson, Edward.
- Coers, (Roller):**
Diamond State Fibre Company
- Delivery Cases:**
Diamond State Fibre Company
- Damp-proofing Paint:**
McArthur, Irwin, Limited
- Drawing Frames:**
Saco-Loell Shops.
Jefferson, Edward.
Leigh & Butler.
Whitlin Machine Works.
- Drying Machinery:**
Lord Bros.
Bredannaz, Louis & Son
East Jersey Pipe Co.
Imperial Trading Co.
Watson, Laidlaw Co.
Jefferson, Edward.
Leigh & Butler.
Sargent's C. G. & Sons
Saco-Loell Shops.
Tolhurst Machine Works.
Stephenson, Harry
- Duck Machines, Cotton:**
Gessner, David.
- Dyeing, Drying, Bleaching and Finishing Machinery:**
East Jersey Pipe Corporation.
Hussong Dyeing Machine Co.
Jefferson, Edward.
Klauder-Weldon Dyeing Machine Co.
Klipstein, A. & Co.
Leigh & Butler.
Philadelphia Textile Machinery Co.
Saco-Loell Shops.
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Tolhurst Machine Works.
Whitehead, Emmans, Ltd.
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Klauder-Weldon Dyeing Machine
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Kuttruff, Pickhardt & Co., Inc.
McArthur, Irwin, Ltd.
Marston, John F.
Nichols Chemical Co.
Pollack Brothers & Co.
Sharpe C. A. Ltd.
Stafford Mfg. Co.
T. D. Wardlaw & Son
Watson, Jack & Co. Ltd.
- Dyewood Extracts:**
Atteaux Dyestuffs & Chemicals Co., Limited
Imperial Dyewood Co.
McArthur, Irwin, Limited
Newbert Color Co.
Sharpe C. A. Ltd.
T. D. Wardlaw & Son
Watson, Jack & Co. Ltd.
- Enamels:**
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Canadian Johns-Manville Co., Ltd.
Enamelled Conditioning Bobbins and Spools:
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- Engineers:**
Main, Chas. T.
Tolhurst Machine Works
- Extractors:**
East Jersey Pipe Co.
Imperial Trading Co.
Watson, Laidlaw Co.
Tolhurst Machine Works.
- Extractors, Full Width Vacuum:**
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Jefferson, Edward.
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Diamond State Fibre Co.
- Fibre Cans:**
Jefferson, Edward
Stephenson, Harry
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- Filters:**
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Gessner, David
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Diamond State Fibre Co. of Canada.
Ltd.
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- Glass-Window:**
Sharpe C. A. Ltd.
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Steel Heddie Mfg. Co.
- Heddies:**
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Steel Heddie Mfg. Co.
Watson Mfg. Co., L. S.
- Hosiery Transfers:**
Kaumograph Co.
- House Paints:**
Canadian Johns-Manville Co., Ltd.
Dominion Paint Works, Limited.
Harley-Kay, Limited.
McArthur, Irwin, Limited.
Scott & Williams.
Sharpe C. A. Ltd.
Dominion Paint Works Ltd.
- Hydro-Extractors:**
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Imperial Trading Co.
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Jefferson, Edward.
Tolhurst Machine Works.
Stephenson, Harry.
Whitehead, Emmans, Ltd.
- Insulation:**
Diamond State Fibre Co., Canada, Ltd.
Canadian Johns-Manville Co., Ltd.
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Harley-Kay, Limited.
Jefferson, Edward.
- Hot Surface Paint:**
Dominion Paint Works, Ltd.
Canadian Johns-Manville Co., Ltd.
- Hydro Extractors:**
Tolhurst Machine Works.
- Incrucians:**
Crompton & Knowles Loom Works.
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Marrow Machine Co., The.
Spindler, E. O.
- Knitting Machinery:**
Crane Mfg. Co.
Dubied, Machinery Co.
Harley-Kay, Limited.
Spindler, E. O.
Stafford & Holt.
Tompkins Bros.
Scott & Williams.
Wildman Mfg. Co.
- Knitting Needles and Supplies:**
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Spindler, E. O.
Wheeler, Charles E. & Son.
- Logwood Extract:**
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Roessler & Hasslacher Chemical Co.
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Watson, Jack & Co., Ltd.
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Grelat Manufacturing Co., The.
- Loom Pickers:**
Barlow, John W. & Co.
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Crompton & Knowles Loom Works.
Draper Corporation.
Jefferson, Edward.
Leigh & Butler.
Stafford Co., The.
Stephenson, Harry.
- Loopers:**
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Whitehead, Emmans, Ltd.
- Machinery Enamels:**
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Leigh & Butler.
- Measuring Machines:**
Gessner, David.
Jefferson, Edward.
T. D. Wardlaw & Son.
Klauder-Weldon Dyeing Machine Co.
Saco-Lowell Shops.
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Bredannaz, Louis & Son.
Crabb, Wm. & Co.
E. H. Jacobs Mfg. Co.
Garland Mfg. Co.
Jefferson, Edward.
Watson Mfg. Co., L. S.
McLaren, J. C., Belling Co., Ltd.
Dominion Paint Works Ltd.
- Mapping Machinery:**
Gessner, David.
Jefferson, Edward.
Leigh & Butler.
Roy, H. S. & Son, Company.
- Netting Machines:**
Dubied, Edwards & Co.
Spindler, E. O.
- Oils, Lard, Etc.:**
Lawson & Co.
McArthur, Irwin, Limited.
- Oils, Soluble:**
British Dyestuff Corporation Ltd.
dersfield Ltd.
A. Klipstein & Co., Ltd.
McArthur, Irwin, Limited.
- Overseaming Machines:**
Dubied, Machinery Co.
Marrow Machine Works.
Spindler, E. O.
- Overedging Machines:**
The Marrow Machine Company.
- Paints—Acid-Resisting, Brick, Concrete, Concrete Floor Hardeners, Canvas Waterproofing, Damp-proofing, Enamels, Fire-Retarding, House, Hot Surface, Machine Enamels, Panstocks, Roofs, Shingle Stains, Mill Whites, Waterproofing, Iron and Steel:**
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Canadian Johns-Manville Co., Ltd.
McArthur, Irwin, Limited.
Sharpe C. A. Ltd.
- Paint (Heated Surfaces):**
Dominion Paint Works, Limited.
- Paint, Mill White:**
McArthur, Irwin, Limited.
Dominion Paint Works, Limited.
- Paint (Bridge and Structural Iron and Pipe Coatings):**
Dominion Paint Works, Limited.
- Paint and Varnishes:**
Dominion Paint Works, Limited.
- Paper Cop Tubes:**
Taylor, Chas. F.
- Paper Heating Machines:**
Gessner, David.
- Paper—Protective:**
Diamond State Fibre Company.
- Pinions:**
Diamond State Fibre Company.
- Peroxides:**
McArthur, Irwin, Limited.
Roessler & Hasslacher Chemical Co.
- Perborates:**
Roessler & Hasslacher Chemical Co.
- Peroxide of Sodium:**
A. Klipstein & Co.
McArthur, Irwin, Limited.
Roessler & Hasslacher Chemical Co.
- Pickers (Shoddy):**
Jefferson, Edward.
Louis Bredannaz & Sons.
Saco-Lowell Shops.
- Picker Pins:**
Jefferson, Edward.
Saco-Lowell Shops.
- Pulleys—Fibre:**
Diamond State Fibre Company.
- Picking Machinery and Cards:**
Jefferson, Edward.
Lord Bros.
- Picks:**
Leigh & Butler.
Saco-Lowell Shops.
Whitin Machine Works.
- Preparatory Machine (Cotton):**
Leigh & Butler.
Saco-Lowell Shops.
- Pressing Machines (Hot and Cold, Rotary and Apron Cloth):**
Gessner, David.
- Rag Tearing Machinery:**
Jefferson, Edward.
- Rebbling Machinery:**
Harley-Kay, Limited.
Scott & Williams.
- Ramie Yarns:**
Jefferson, Edward.
- Reeds:**
Bredannaz, Louis, & Sons.
- Receptacles:**
Diamond State Fibre Company.
- Roller Covers:**
Diamond State Fibre Co. of Canada, Ltd.
- Rolling Machines:**
Gessner, David.
- Roof Paints:**
McArthur, Irwin, Limited.
- Rolling and Reducing Frames:**
Lord Bros.
Jefferson, Edward.
Leigh & Butler.
Saco-Lowell Shops.
Stephenson, Harry.
- Salt:**
The Canadian Salt Co.
- Scalloped Machinestions:**
Marrow Machine Co.
- Wileco & Gibb Sewing Machine Co.**
- Scouring:**
McArthur, Irwin, Limited.
Sharpe C. A. Ltd.
Klauder-Weldon Dyeing Machine Co.
- Scutching Machine:**
Lord Bros.
Gessner, David.
- Second Hand Machinery:**
Lamb, J. K., Textile Machinery Co.
Jefferson, Edward.
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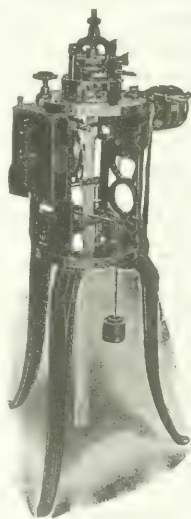
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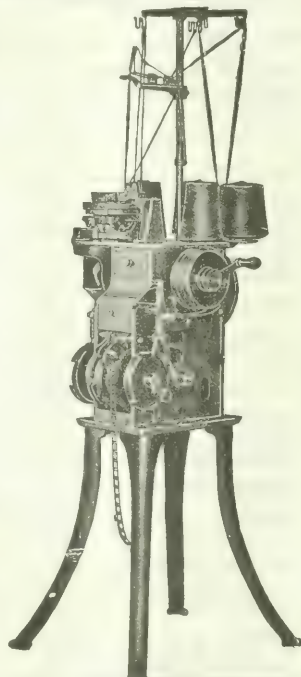
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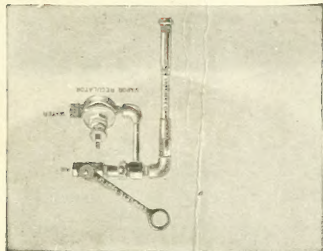
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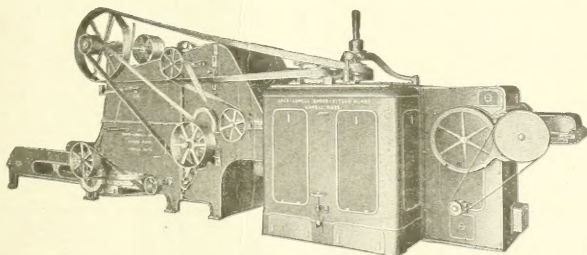
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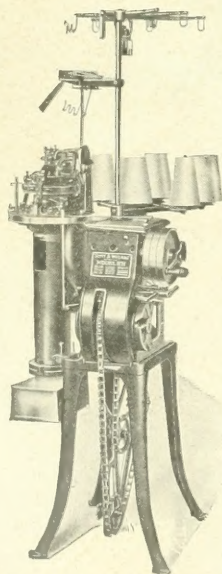
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